Why Advertising in the Refrigeration Directory and Market Data Book is a Good Business Investment—

THIS year the refrigeration industry will sell the largest number of refrigerators in its history and there is every indication at present that the 1934 refrigeration business will set new records.

Consider the part that the REFRIGERATION DIRECTORY AND MARKET DATA BOOK can play in helping you get a larger share of next year's business.

First issued in 1932, the DIRECTORY filled a big demand for facts and figures on all phases of the refrigeration business. Potential buyers of equipment and services have turned to the DIRECTORY for their needed information and in its two years of service the DIRECTORY AND MARKET DATA BOOK has been a potent factor in bringing these potential buyers in contact with sources of supplies.

With this background of service, the REFRIGERATION DIRECTORY AND MARKET DATA BOOK has industry acceptance today which will make advertising in the new 1934 edition of greater value than ever before.

The 1934 edition of the REFRIGERATION DIRECTORY AND MARKET DATA BOOK is a logical, practical advertising medium for every manufacturer of refrigeration equipment and for every manufacturer, large or small, who sells supplies or service to this great industry because:

1. The DIRECTORY is the recognized industry register of all trade-marked refrigeration products.

2. It is the buyers' guide for engineering, production, and purchasing executives.

3. It is the handbook for all the suppliers who serve the industry.

4. It is the encyclopedia of information for present and prospective distributors and dealers.

To Manufacturers of Refrigeration Systems

As a manufacturer of refrigeration systems—household, commercial, or industrial—you should use display space in the DIRECTORY because:

1. It offers you an effective means of securing new dealers; especially successful sales outlets that are actively interested in a distributorship or dealership. No matter where these potential dealers start making their inquiries about the right products to handle, they are almost sure to be referred to the REFRIGERATION DIRECTORY AND MARKET DATA BOOK.

2. The DIRECTORY is used by good dealers who, for one reason or another, are dissatisfied with their present connections.

3. Your advertisement will be referred to by the great number of dealers who, with incomplete lines, are buyers of additional equipment, special sizes, designs, and applications.

4. Your advertisement will be seen both by service departments of dealers and by independent service companies, who are large buyers of parts and supplies for repair and maintenance work.

5. You can also use the DIRECTORY to reach important export markets. (The DIRECTORY'S foreign circulation, for instance, will include distribution to every American consular office.)

6. Your DIRECTORY advertisement will reach many unidentified prospects, both dealers and consumers throughout the year. (The DIRECTORY, for example, will be furnished free to the reference rooms of public libraries in all cities of 50,000 population or more.)

7. In addition, the DIRECTORY offers you an ideal means of supplementing your timely advertisements in ELECTRIC REFRIGERATION NEWS and REFRIGERATED FOOD NEWS with a specific announcement that will be current throughout the year; particularly important is this feature in the case of irregular advertisers.

To Manufacturers of Cabinets, Compressors, and Cooling Units

As a manufacturer of cabinets, compressors, or cooling units, you will find the use of display space in the DIRECTORY profitable because:

1. The DIRECTORY will reach all the active and potential buyers of these major parts of the complete refrigeration system.

2. Your message will be seen by large distributing organizations and other concerns interested in private brands.

3. The DIRECTORY will be used by distributors and dealers who buy equipment for special installations.

4. The DIRECTORY will be a guide for dealers with service departments and for independent service companies.

5. Your advertisement will also reach the export market.

To Manufacturers of Parts, Materials and Supplies

If you are a manufacturer of parts, materials or supplies for the refrigeration industry, you will find the DIRECTORY made to order for your business announcement because:

1. In reaching established manufacturers and assemblers of refrigeration equipment, your advertisement will be seen by executives, engineers, production men, and sales officials—all of whom are influential in setting up specifications, in placing orders.

2. Your advertisement will also reach distributors and dealers who sell the finished product and whose good will or favorable comments will be of great value to you in selling manufacturers and in keeping them sold.

3. Your message will put you in touch with distributors and dealers who are equipped to make all kinds of commercial and special applications of refrigeration.

4. Your DIRECTORY advertisement will also be referred to by dealers and service men who are large users of parts, materials and supplies in handling repair and maintenance work.

To Manufacturers of Service Tools

As a manufacturer of service tools, you should use advertising in the DIRECTORY because:

1. Your message will reach distributors and dealers who have established service departments and who are eager to adopt new methods and new tools that will improve their service, lower their costs.

2. You will appeal to independent service companies—to consistent buyers of service tools.

3. You will also reach new distributors and dealers before their service organizations are completely equipped.

To Manufacturers of Refrigeration Accessories and Other Related Merchandise

If you manufacture refrigeration accessories or some other related merchandise that can be handled by refrigeration dealers, you should tell the story of your products in the DIRECTORY because:

1. Refrigeration dealers are in an excellent position to carry new ideas about the preparation or preservation of food to the public.

2. Furthermore, dealers recognize the importance of accessories in selling the advantages of modern refrigeration.

3. In home service work, cooking schools, exhibitions, accessories are needed to dramatize demonstrations.

4. You can use the DIRECTORY to impress upon dealers how your products fit into the scheme of selling, demonstrating, or equipping modern refrigeration systems.

To Manufacturers of Air-Conditioning Equipment

As a manufacturer of air-conditioning equipment with summer, winter or year 'round functions, you will find advertising space in the 1934 edition of the DIRECTORY productive because:

1. Refrigeration distributors and dealers are showing a growing interest in air-conditioning equipment. They see it as a wonderful opportunity for profitable sales activity. They will use the DIRECTORY to see what equipment is on the market and who makes it.

2. It offers an effective means of securing new distributors and dealers.

To Manufacturers of Household Appliances and Other Companion Merchandise

If you manufacture household appliances or other products which may be sold as companion merchandise by refrigeration distributors and dealers, you will find it of distinct advantage to use space in the DIRECTORY because:

1. Your advertisement will reach aggressive specialty selling organizations that are now making outstanding records in merchandising electric refrigerators.

2. Refrigeration dealers are keenly interested in building up the valleys of their off-seasons by selling other products that fit in with their plan of doing business.

3. Refrigeration dealers have unusually attractive display rooms in prominent locations—desirable space for other products.

4. They are reputable merchants with real experience in handling high-price merchandise.

5. Having established many satisfactory customer contacts, they are in a position to capitalize their customer relationships in merchandising other products.

To Other Manufacturers Who Have Something the Industry Can Use to Advantage

If you have something the refrigeration industry—its great manufacturing plants, its engineering laboratories, its wholesale and retail sales organizations—can use to advantage, you should advertise in the DIRECTORY because:

1. The REFRIGERATION DIRECTORY AND MARKET DATA BOOK will continue to be the handbook of an industry that is known for its advanced merchandising, its progressive production and sales methods, its eagerness to keep out in front.

2. The DIRECTORY will represent an industry that is still young, still open-minded, still in the early stages of forming buying habits, still eagerly seeking new methods, new materials, new sources of supply.

Advertising Forms of the 1934 Edition Close Feb. 1

Farsighted manufacturers are making plans *now* to get a bigger share of 1934 refrigeration business. It is not too early to consider the manner in which the REFRIGERATION DIRECTORY AND MARKET DATA BOOK can function in giving you a permanent sales contact with your next year's refrigeration market.

Make provision now in your 1934 sales and advertising appropriation for an adequate sales message in the REFRIGERATION DIRECTORY AND MARKET DATA BOOK.

The rate is low (only $100 per page), especially low when you consider that your sales message in the DIRECTORY will be working for you every day throughout the year.

Reserve your space now.

BUSINESS NEWS PUBLISHING CO.
550 Maccabees Bldg., Detroit, Mich.

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

Registered U. S. Patent Office

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS.

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DETROIT, MICHIGAN, NOVEMBER 22, 1933

Entered as second-class matter Aug. 1, 1927

THREE DOLLARS PER YEAR
TEN CENTS PER COPY

NRA Reverses Rule on Wages, Outside Salesmen Exempted

Stay on Wage Provision Granted by Retail Code Order

WASHINGTON, D. C.—The National Recovery Administration, in Retail Code Order No. 5, has specifically exempted outside salesmen from the minimum wage provisions of the Retail Code. The order is now in effect.

Retail Code Order No. 5 reverses in part the NRA ruling (in bulletin 1554) to the effect that all employes paid on a commission basis and working unrestricted hours must be paid the minimum wage. The ruling in the bulletin had formed the basis for the story printed in last week's issue of ELECTRIC REFRIGERATION NEWS.

The order was signed by R. W. Lea, acting administrator, with approval recommended by Division Administrator A. D. Whiteside, and is as follows:

"Pursuant to the authorty vested in me by the Executive Order issued by the President on July 15, 1933, and upon application of interested parties for a modification of the code of fair competition for the Retail Trade on Oct. 21, 1933, and effective Oct. 30, 1933, and having found that justice requires a stay of the application of said code to all persons similarly affected, I hereby stay the application of said Code as follows:

"1. The provisions of Article VI, sections 1, 2, and 3, and of Schedule A, Section 3, relating to minimum wages, are stayed as to outside salesmen, as defined in Article II, Section 5 (c).

"This order shall remain in effect until hearing and determination by the President of the issues raised in objection to the above mentioned provisions, in accordance with the above Executive Order."

A.S.R.E. HEARS TALK ON BREWERY COOLING

LOS ANGELES—"The Engineer's View of a Modern Brewery" was the subject discussed by F. S. Hadfield of the Gay Engineering Corp. when he addressed the Los Angeles section of the American Society of Refrigerating Engineers recently.

Processes involved in the manufacture of beer were outlined in detail by Mr. Hadfield, who gave only minor attention to the subject of refrigeration and its place in modern brewing.

While beer has been made for hundreds of years, it is still not an exact science, the speaker began. Results obtained vary with minute changes in

(*Concluded on Page 8, Column 3*)

XMAS WINDOW CONTEST RULES GIVEN BY BUREAU

NEW YORK CITY—Electric Refrigeration Bureau is offering cash prizes totalling $700 for the best Christmas window displays of electric refrigerators this year.

There will be nine prizes awarded in this 1933 renewal of the annual nation-wide holiday contest, eight of which, aggregating $600, will be divided equally among competing dealers and central stations. Amounts to be awarded and classifications in which prizes are offered are as follows:

For dealers—$100 for the best window of 100 sq. ft. or less, $100 for the best window of more than 100 sq.

(*Concluded on Page 4, Column 4*)

Musical Refrigerator Halts Wine Tasters

CHICAGO—Putting a stop to profit-eating "sampling" was the job assigned to Charles Cappels of General Household Utilities Co.'s refrigeration service department here recently.

A roadhouse owner complained that his chefs and waiters were over-enthusiastic about the stock of wines kept in the establishment's Grunow refrigerator, and were sampling the stock at too-frequent intervals.

Mr. Cappels fixed that. He connected a phonograph to the light in the refrigerator, so that every time the latter's door is opened, the room is instantly filled with band music.

Sampling is declining rapidly.

Succeeds Alter

GEORGE T. BRYANT
New assistant general sales manager of Majestic.

* * *

BRYANT WILL ASSIST DITZELL AT MAJESTIC

CHICAGO—New assistant general sales manager of Grigsby-Grunow Co. here is George T. Bryant, succeeding Harry W. Alter, who resigned Nov. 10 after serving nine months in that capacity.

Floyd Masters, who has been connected with the Majestic organization for a number of years, has been appointed successor to Mr. Bryant as field sales manager, according to John F. Ditzell, assistant vice president and general sales manager.

Mr. Bryant will concern himself chiefly with development of the company's dealer representation throughout the country, but will devote a part of his time to distributor operations, Mr. Ditzell states.

CAVALIER REFRIGERATORS NO LONGER BEING MADE

CHATTANOOGA, Tenn—Tennessee Furniture Corp.'s entire stock of Cavalier electric refrigerators has been disposed of, and the company has now given up the manufacture of complete electric refrigerators, according to F. A. Shipley of the sales department.

COPELAND PLANT TO BE OPERATED BY NEW OWNERS

Commercial Business Is Being Stressed At Present

MT. CLEMENS, Mich.—Copeland Refrigeration Corp., successor to Copeland Products, Inc., will continue to operate as a manufacturer of commercial and household electric refrigeration systems, according to E. A. Costa, who has been assigned to manage the plant here by the Winslow-Baker-Meyering Co., industrial and refinancing firm of Detroit, which purchased Copeland Products, Inc., as a going concern in September.

Approximately 50 men are now employed in the plant here, being engaged in the production and service of Copeland refrigeration equipment, according to Mr. Costa. At the present most of the work is being concentrated on commercial refrigeration, the plant manager declares.

The new company is also operating branch sales offices in New York City and Detroit, according to Mr. Costa's statement.

Officers of the Winslow-Baker-Meyering Co., which has just moved to new offices in the Fisher building in Detroit are: L. C. Winslow, president; L. H. D. Baker, vice president; Ralph Meyering, secretary-treasurer. These men occupy the same executive positions in the Copeland Refrigeration Corp.

All stock in Copeland Refrigeration Corp. is owned by the industrial and refinancing company. The new owners are not connected in any way with trusteeships or receiverships which developed among creditors in the closing out of the old corporation.

FOIL INSULATION IS MADE IN PADS FOR CABINETS

NEW YORK CITY—Aluminum sheet insulation made up into pads of proper form and size for ready installation in refrigerator cabinets is announced by Reynolds Metals Co. With the development of these pads, the cost of this type of metal insulation has been materially reduced for refrigerator manufacturers, according to J. Louis Reynolds, vice president.

In this new pad form the insulation will be known as "Metallation," he says.

Tests by Frigidaire Corp. during the past year have contributed greatly to the development work undertaken by the Reynolds company, especially in

(*Concluded on Page 8, Column 1*)

Styled Cabinets & Accessories Mark 1934 Leonard Line

1934 Leonard

The legs on the 1934 Leonard electric refrigerators are an integral part of the side-walls, giving more strength to the cabinet.

Cabinets Have Rounded Lines, Evaporator Is Altered

DETROIT—Ten new household models characterized by conservatively styled cabinets and an abundance of "sales features" comprise the 1934 Leonard refrigerator line which was introduced to Leonard distributors at their convention here Nov. 17 and 18.

Exterior design of the new Leonard is modernistic. Curves supplant the almost-square corners on this year's cabinets. At the top, the refrigerator walls round over into a flat service top.

Cabinet legs are now integral parts of the side walls. In front and back, and on either side, the cabinet is arched from leg to leg.

The Len-A-Dor, foot pedal which opens the door when toe pressure is applied, has been redesigned to permit easier opening. The pedal has been lowered and the mechanism readjusted to give "hair-trigger" action.

Interior of the new Leonard presents a picture entirely different from that of the 1933 models. The cooling unit is located in the center. The evaporator itself has been further refined. On all models of the new line, the units are all-porcelain on Armco iron, inside and out, there being no exposed tubes. The back has been entirely sealed to reduce frost formation and the possibility of trays sticking.

Door of the evaporator is of new design, with two-tone chromium finish and raised, polished bands. New and

(*Concluded on Page 4, Column 1*)

ENGINEERS STUDY SOUND DEADENING

By John T. Schaefer

DETROIT—That refrigerator noises can be measured, analyzed, and reduced was shown in a series of talks Monday night when the Detroit section, American Society of Refrigerating Engineers, gathered for its regular monthly meeting.

Each speaker approached the subject frankly, with everyone in accord with the fact that refrigerators do make more noise than is desirable, and told what he knew about reducing it. The meeting was arranged by Prof. Hugh Keeler of the University of Michigan and conducted by John Wyllie of Kelvinator Corp.

First speaker was Dr. Floyd A. Firestone, professor of physics at the University of Michigan, who considered as his subject "Diagnosis in the Reduction of Refrigerator Noises." He was followed by Dr. Ernest J. Abbott, research physicist of the uni-

(*Concluded on Page 9, Column 1*)

CAFFREY PRESIDENT OF ESSEX LEAGUE

NEWARK—John Caffrey, Jr., of Buhl & Caffrey, Inc., was made president, and Robert Beller of the Beller Electric Supply Co. vice president of the Essex Electrical League at the organization's annual election of officers here Nov. 9. Caffrey will succeed Phil Harrison, New Jersey G-E distributor, as president.

New treasurer of the league is Richard H. Osgood of the Hazard Insulated Wire Co., New York City, and James H. Stapleton of Newark's Public Service Electric & Gas Co., is secretary.

Elected to membership on the league's executive committee were H. P. J. Steinmetz and F. D. Pembleton of the Public Service Electric & Gas Co. and Arthur Walsh of Thomas A. Edison, Inc., Orange, N. J.

Following are newly elected delegates to the New Jersey Council of Electrical Leagues:

H. P. Litchfield, Graybar Electric Co., Newark; P. H. Harrison, Philip H. Harrison & Co., Newark; F. J. Durkin, General Electric Supply Corp., Newark; F. A Hickey, New Jersey Bell Telephone Co., Newark; H. S. Stratton, Westinghouse Electric Supply Co. Newark; and Elmer D. Wilson, Newark.

WADDELL ENTERTAINS 150 AT THANKSGIVING PARTY

By George F. Taubeneck

BOSTON—Jack Waddell, Norge distributor up in these parts, is thankful for having had a good year in 1933; so last Wednesday night he gave a Thanksgiving party for 150 of his star salesmen and dealers.

Dinner and entertainment, however, were not all. Substantial checks, gold watches, diamond rings, emblems, and certificates were passed out to ranking salesmen.

Held in the Princess room of the old Somerset hotel (where Boston society buds make their debuts), the affair was a humdinger from the go.

According to Jack's right-hand man, Treff Maloney, the Norge Vikings and Norsemen present sold nearly a million dollars worth of Norge refrigerators to New England homes during 1933.

In behalf of the General Equipment Corp., of which he is president, Mr. Waddell personally presented the long

(*Concluded on Page 6, Column 4*)

First Copeland Goes to Smithsonian Institute

"The first successful refrigerator" is shipped to Smithsonian Institute with appropriate ceremony.

* * *

By John T. Schaefer

MT. CLEMENS, Mich.—Presentation of "the first successful automatic refrigerator" to the Smithsonian Institute, national museum of the United States government in Washington, D. C., was made here Friday afternoon with fitting tribute to its inventor, Edmund J. Copeland.

The affair was held in the lobby of the Copeland Refrigeration Corp., with an attendance of about 60 Mt. Clemens city officials, Kiwanians, Rotarians, the Copeland company representatives, and other local organizations.

The refrigerator, an old bulky water-cooled model for remote con-

(*Concluded on Page 6, Column 3*)

BY GEORGE F. TAUBENECK - - -

Travel, the Educator

Some wise old advice-giver (we've lost our copy of "Favorite Quotations," so can't identify it for you—sorry) once opined that before marrying a man, a girl should take a long journey with him, because travel is a great revelation of a man's faults and qualities.

We're inclined to think that's a pretty good idea, and we've seen it work out in practice.

Next Saturday, for instance, the writer will be best man at the wedding of JACK ADAMS, production manager of the Business News Publishing Co., and JEAN HEGWOOD, who was once secretary to F. M. COCKRELL and who now has executive duties with the company.

That's one marriage we figure is scheduled to *last*. Primary reason is the utter sanity of the contracting parties. Moreover, this straight-thinking couple bore out our travel theory by taking their honeymoon—a perfectly chaste and chaperoned one, of course—*before* their marriage instead of after it.

One more personal example and we'll quit. When HOWARD MATEER came out to Detroit last year from New York and a long career with McGraw-Hill to become advertising manager of ELECTRIC REFRIGERATION NEWS, the first thing F. M. COCKRELL did was send the pair of us out on a long trip together.

Result was that within the first week we had sized each other up pretty well, noted shortcomings and blind spots, and acquired a measure of mutual appreciation and respect. And to date we haven't had a single scrap or serious disagreement—an unusual record for advertising managers and editors.

* * *

Iron Man Johnny

All of this philosophical dissertation is just leading up to the news that we have a new appelation for JOHN KNAPP, vice president in charge of sales for Norge Corp.

It's "IRON MAN JOHNNY." And we're serving notice right here that from now on that's how he's going to be known to us.

How do we get that way? Because we've just returned from a trip to Boston and New York with Johnny. And WHAT a trip.

Immediately previous to this journey, we were in close and almost constant association with him at the Norge convention in Detroit—so that all in all we practically lived together for two weeks.

As a result we can say that there are darned few men in the refrigeration industry we know so well and so intimately as we do Johnny.

Furthermore, there are darned few persons anywhere among our acquaintances—and the list includes a raft of notables in the sports world—who have such tremendous vitality and amazing powers of physical endurance as "Iron Man Johnny."

Were Mr. Knapp, on the other hand, asked to express his opinion of us, he'd probably wave a deprecating hand and say:

"He can't take it."

* * *

Try These on Your Constitution!

Some samples of the life one must lead who would dare try to keep up with Johnny:

1. Getting off the train for Boston before 7 a. m., we had no breakfast, and didn't lunch until 2:45. And then it was clam broth and caviar! No honest-to-God food until 8:30 that night.

2. After a far-into-the-yawning session with Norge distributing executives in New England, held in a suite at the Copley Plaza, John was up with the chickens, rousted everybody else out of bed, and before a sleepy room service crew could collect their wits and rassle up some breakfast, was far along into the business of the day.

3. Thursday our train arrived in New York at 6:00 a. m. After a busy day, we started on a tour of Manhattan's late spots with a party of Norge people. Of these spots, none stays open later than Le Petite Palais. We closed that place. Yet early Friday morning John was on the phone, making snap decisions, giving orders, and interpreting policies for various members of his organization. And before 9:30 he had personally closed a sale for a large installation of units in a hospital.

These anecdotes, boys and girls, are only samples. We could go on and on—just like "Iron Man Johnny"—far into the night.

But maybe you get the idea. Johnny is the quickest starter and longest laster we've ever seen—a combination of a CHARLIE PADDOCK and a PAAVO NURMI, of a 10-second sprinter and a champion marathon runner.

* * *

How to Be An 'Iron Man'

He gets an astounding number of things done in an unbelievably short time. And after two weeks of intimate association with Norge's "Iron Man," we think we have discovered some of his secrets.

First of all is PREPARATION. He is able to make decisions rapidly, to strike quickly and close a sale in an eyeflash, because he has thought out his answers in advance.

On the train going to Boston he studied an interesting series of charts prepared for him by newspapers. He relaxed and ruminated over these charts. He talked about them.

Johnny is one of those men who think best out loud. He likes conversation; he also likes good listeners.

A great deal of his conversation on the road to Boston seemed at first a bit aimless and a bit disconnected, even though it was all concerned with electric refrigeration.

But after arriving at Boston, the helter-skelter thinking-out-loud suddenly crystallized into a set of crisp decisions and a brace of convincing selling talks.

He asks questions, reads, asks more questions. Always seeking information. He spent considerable time with us, for instance, talking about physical values of advertisements—emphasis, motif, type, layout, illustrations.

He talks with everybody—waiters, conductors, bellhops, band leaders, entertainers, proprietors, taxi drivers, barbers, shoe shiners, cashiers, politicians, celebrities—any and everyone he meets during a trip. Wants to know human reactions, how people think and talk and act. That irrepressible curiosity, plus his talent for making ordinarily reticent and taciturn people talk, might have made him a great journalist.

(Aside — Here's his big secret: Johnny's great ambition was to be a surgeon. Circumstances decreed otherwise. He has the hands, the capacity for study and analysis, and the physical endowment to be his heart's desire, too.)

Another explanation, or "secret," of his mighty capacity for volume production of work is his insistence on service.

He gets what he wants, and gets it faster than any man we've ever encountered.

Crisp and brisk as an army major—and just as commanding—he starts a general scurrying whenever he goes.

No matter whether it be from a distributor, an innkeeper, a chef, a conductor, a bellhop, or a night club entertainer, *he gets what he wants.*

His physical powers, of course, are largely heritage plus early training. You can't teach that sort of thing by mail. But here is one little secret:

He has learned the value, and the art, of taking short "breathers."

Some of the wisest football coaches we know give their charges half a dozen four or five-minute rest periods or "breathers" during a two-hour practice. Rest, they have found, is sometimes more valuable if divided and distributed.

Marathon dancers and six-day bicycle races keep going by utilizing the principle of short but frequent rest periods.

Johnny, like Napoleon, can lie down anywhere, anytime, and snatch a few minutes of sleep.

Most of us find that "when we're up we're up." Not Johnny. Instead of loafing or wasting precious time during the idle moments that occur in any man's day, he catches a short nap. And comes out of it cocked like a trigger. Thus he can stretch a working day far into the night, and keep going at top speed all the way.

* * *

Jack Waddell Treats His Boys

Occasion for our trip to Boston was JACK WADDELL'S Thanksgiving party for 150 of his most successful dealers and salesmen (see story on page 1 of this issue).

"Iron Man Johnny" and the writer were slated to speak at Jack's party, which we did. But so excellent a host was this cultured New England distributor for Norge that we had practically no time for preparing anything worthwhile to say. All good hospitality is not concentrated in the South.

Mr. Waddell is not a money-grubber. He's in business to make money, of course; but he's also in business because he enjoys associating with other good business men, and because he has a set of definite and deep-seated affections for the men who have comprised his organization for so long.

So when he enjoys a good year, as he did in 1933, he divvies up. Wish you could have seen the stacks of gold watches and diamond rings, and the sizeable checks, which he handed out that evening.

We won't attempt to mention all the interesting men we met and talked with while there. There were active young men like LEO ESKIN and FRANK COYLE from the Providence, R. I., branch; JOE WAYNER, another live one from Providence; JOE ELOWITZ, a born salesman if we ever saw one, from Pawtucket; SAM and JOE KAUFMAN from Union Electric Supply Co. of Boston; and PERCY LAVINE and WILLIAM LAVINE, who walked home with pockets bulging with awards.

And there was housewifely Mrs. RACHEL GALBREATH of Worcester, the country's second Viqueen. And ABE MARKS, fast-working Boston dealer, and alert W. J. HILTZ of the same city.

Gil Baird Flies to Work

E. M. Lacey (left) and W. N. Kennon (right), Westinghouse factory representatives, greet Gil Baird, editor of Westinghouse Cold Selling Talk, as he arrives in Newark by plane to interview quota busters.

In the Nick of Time

Officials of the Salt Lake City Grunow distributorship waited at the airport until 2:20 a. m. recently to receive a new Grunow radio in time for the opening of their winter dealer meeting.

STACY GOODRUM of Braintree, Mass. (he has been with Norge and Copeland factory organizations), told us some things for the good of our soul. Helpful information came from many others. It was a valuable visit.

* * *

No Repossessions!

ALFRED I. WRAY of the Commercial Credit Corp. made the remarkable statement to us that in the New England territory this year *there hasn't been a single repossession of a Norge refrigerator!*

Furthermore, the figure for repossessions of Norge refrigerators sold on time payments this year is only 1/100th of one per cent for the entire nation!

That, we submit, is a remarkable record.

* * *

Dual Motor Installation

JOE KAUFMAN of Union Electric Supply Co., Boston, told us that an engineering article on Century dual motors in ELECTRIC REFRIGERATION NEWS had been of considerable help to him.

Last May he bid on a refrigeration job for the lighthouse tender *Lotus.* Contractors specified a 2-hp. rotary converter, which would operate on AC current at the dock, or DC current at sea.

As an alternate proposal, Mr. Kaufman suggested a Century dual motor, and demonstrated that it would do the job more efficiently than the rotary converter. He made the sale and the installation, and the job has been working satisfactorily ever since.

The Century dual motor operates a ¾-hp. Servel commercial refrigerating machine with a Humidraft, the entire installation being used to refrigerate a 260-cu. ft. walk-in cooler.

Sale was made by Mr. Kaufman through Refrigerator Sales, Boston, which is a subsidiary of Union Electric Supply.

* * *

Service Man Honored

D. F. MURPHY is an extraordinary service man. He delivers, installs, and services all the Norge refrigerators which go into the New England territory, as well as those of a number of other makes. And from his thriving business he's making money.

The job of a service man is generally a thankless one, and rarely do these fellows get many bouquets of appreciation from selling men. That's why JACK WADDELL'S action at the aforementioned banquet was so unusual.

Distributor Waddell introduced Mr. Murphy to the crowd (practically all of whom knew him already), called for a big hand, and then presented him with a fine watch, suitably engraved.

Mr. Murphy, good Irishman that he is, was deeply moved. When TREFF MALONEY, Mr. Waddell's brainy sales promotion manager, offered Mr. Murphy $100 for the watch before he had even taken it out of the box to look at it, the service man rose up in indignation.

"Listen, fella," he cried, "I wouldn't take $500 for it, not even if it's only a cheap turnip. That watch means more to me than, well . . ." He couldn't put it in words, but you could see how he felt.

It was another example of Mr. Waddell's fine feeling for human relationships, and his generosity toward friends and fellow workers.

Another Sterling Idea

As we've said a good many times before, JIM STERLING, Norge Corp.'s advertising and sales promotion manager, always seems to have a new trick up his sleeve.

Now he's found a scheme for making sure that his company gets 100 cents' worth of good out of every advertising dollar, and that Norge dealers understand all the why's and wherefores of the company's national advertising.

Reprints of every advertisement prepared for Norge are mailed in advance to all dealers. Each copy carries a side fold containing a message from the copywriter who worked on the advertising, explaining all the angles involved in creation of the copy, and showing the dealer how he may get full value from the advertisement.

IF YOU HAVE A RUBBER PROBLEM MILLER WILL FIND YOU THE RIGHT ANSWER

"Miller Knows Rubber"

CONFIDENTIAL SERVICE ON RUBBER PARTS

THE technical staff maintained by Miller exclusively for the service of the refrigeration industry, has worked closely with every important manufacturer of refrigerators since the birth of the business.

Developing special compounds for specific qualities, suggesting improvements in their design, spotting possible economies—these are daily routine with us. The strictest professional respect for confidential data is one of the reasons why Miller service is appreciated.

If you seek a rubber compound free from odor, that is oil-resisting, grease-resisting, and even age-resisting—or if you have a peculiar problem in design of a rubber part—let Miller do your worrying for you. If we have not already a formula or a blueprint that answers the purpose, we will find one.

MILLER KNOWS REFRIGERATION PROBLEMS

Miller

MILLER RUBBER PRODUCTS CO., Inc., AKRON, O.

WAIT !

get the Frigidaire story of dealer sales and profits before you decide for 1934

Strictly as a business proposition it will pay you to see what Frigidaire has to offer before you definitely decide upon your refrigeration plans for next year. For the Frigidaire proposition offers opportunities for profit no refrigeration dealer can afford to ignore.

The Frigidaire program is tried and tested. It was largely responsible for Frigidaire's spectacular success in 1933 . . . a record volume of business in which Frigidaire dealers substantially profited.

And these proven ideas and methods are now the basis for an even greater program of intensive dealer cooperation, adapted to meet new and changing conditions in 1934. It's a program that includes business-building advertising and sales promotional activities covering Frigidaire's complete line of refrigeration equipment.

With Frigidaire leadership and preference more firmly established than ever, with the improvements and refinements in the entire Frigidaire line, and with the kind of cooperation which has *proved* its effectiveness, the refrigeration dealer is now offered an outstanding business opportunity. Get the Frigidaire story before you make your plans for 1934. Write today to Frigidaire Corporation, Subsidiary of General Motors Corporation, Dayton, Ohio.

Frigidaire

A GENERAL MOTORS VALUE

NEW LEONARDS HAVE 12 FREEZING SPEEDS

(Concluded from Page 1, Column 5)

heavier springs are provided to insure positive closing. The control panel is located at the top of the cooling unit.

As was the case in the 1933 line, the Chill-om-eter appears in the center of the panel, but this time with 12, rather than 8, different freezing speeds.

In addition, there is a position marked "vacation" temperature, designed to preserve the contents of the box at minimum operating cost.

Automatic quick freezing is also provided in the control assembly. When the lever at the right of the Chill-om-eter knob is tipped to the right, or to "quick freezing," the temperature in the evaporator takes a dive to 8°.

When this low temperature is reached, the bottom tray of water is frozen solid and the next highest tray is about three-fourths frozen. Then the control trips automatically back to normal operation.

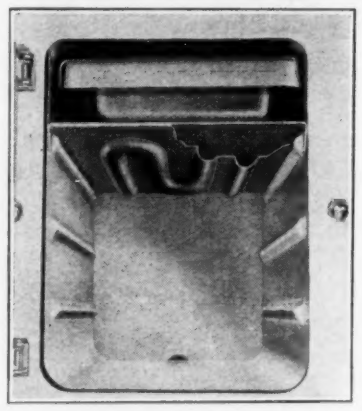
When the same lever is tipped to the left, the "steady-kold defroster," introduced a year ago, goes into action. When the frost is disappearing, steady cold is maintained in the box, the food stays protected and the ice cubes remain solid.

The 1934 steady-kold defroster, unlike that of 1933, automatically sends the mechanism back to normal operation once the defrosting process is over.

Also provided on the panel is an improved circuit breaking switch, which stops the motor in case of overload on the line. To restart the motor, the user has only to tip the switch back to the "start" position. The circuit breaker eliminates the necessity for a fuse in the mechanism.

Standard in nine models of the line is a refrigerated shelf in the evaporator. Refrigerant is concentrated under this shelf, which is located in the upper part of the cooling coil. The tray on this shelf is equal in freezing speed to the tray at the bottom.

Fast Freezing



Refrigerant is concentrated beneath this shelf in new Leonard.

A rubber tray of new design, termed the "Easy Cube," is standard in six models. The tray is built on a flexible wire frame, which holds it rigid while it is being filled with water. A flexible rubber grid is offered in eight models.

The "Cold Chest," provided last year only in the deluxe porcelain model of the line, appears in six models this year. It is a utility double-depth tray with cover.

Entirely new in Leonard is the ice tray lifter provided with each model. The lifter, slipped under a metal tray, offers a means of prying the tray loose from its container when the cubes are frozen.

Standard in all models is the glass defrosting tray with ribbed bottom. The glass ribs, or ridges, keep stored ice cubes from freezing together. If meat is placed in the tray, the ribs keep it away from any water that may be in the bottom.

With sufficient capacity for several beverage bottles, as well as a supply of eggs, butter, and other dairy products, the Leonard dairy basket this year appears in a much larger size. The basket, a sliding wire container, appears in six models. Also standard in six models is an improved automatic electric light and a new vegetable crisper.

Another 1934 Leonard feature is the "service tray," or "rearrangement tray," which fits below the bottom shelf in six models. The tray can be partially drawn out and used in rearrangement of the refrigerator's contents, or can be removed and used for serving.

In the 1934 line, shelf space ranges from 8.34 sq. ft. in the smallest model to 21.88 sq. ft. in the deluxe two-door refrigerator. In last year's line, maximum shelf space was 19.07 sq. ft.

Folding shelves, next to the center-mounted evaporator, make flexible the interior arrangement. Six of the models have two shelves of this type, one on either side of the unit.

In the PD-4, largest of the single-door models, is a sliding lower shelf. Shelves in all models are of the smooth-bar type, and are held in place by rubber-covered supports of nickel-plated bronze.

Hardware in the new line is chromium finish, with black inlay and etched design, and is semi-concealed.

The refrigerator door in '34 models is made of two steel stampings, fastened together in one solid unit. There are reinforcing clips to hold the outer door pan corners and edges in place.

Offered as an accessory with each model is a rubber mat for use on the top. The mat, which prevents dishes from sliding and chipping, has an embossed black border and a marbled grain.

To reduce vibration when the motor is running, the condensing unit is mounted on tempered steel springs cushioned in live rubber.

Cylinder block has been redesigned to increase the unit's efficiency. A new part of the assembly is an automatic belt-tightener. Leonard engineers say that the mechanism can be taken out of the cabinet in one piece in 15 minutes.

Five of the models are finished in white lacquer, and range in capacity from 4.35 to 7.21 cu. ft. The remaining five are all-porcelain models, with capacities ranging from 5.88 to 10.6 cu. ft.

No Dish Juggling

This tray is featured in the 1934 Leonard. Partially withdrawn, it facilitates dish rearrangement, or it may be used as a serving tray.

XMAS WINDOW CONTEST RULES GIVEN BY BUREAU

(Concluded from Page 1, Column 1)

ft., $50 for the second best window of 100 sq. ft. or less, and $50 for the second best window of more than 100 sq. ft.

For central stations—$100 for the best window of 100 sq. ft. or less, $100 for the best window of more than 100 sq. ft., $50 for the second best window of 100 sq. ft. or less, and $50 for the second best window of more than 100 sq. ft.

In addition, $100 will be awarded to the local Electric Refrigeration Bureau best represented in the contest by quantity and quality of displays of its members in proportion to the total number of retail sales outlets in the territory.

This year's competition does not include store interior displays, as was the case in the last two contests but is confined solely to show windows.

Rules of the contest are as follows:

Competing displays must be installed and in use at some time between Nov. 15 and Christmas, 1933.

One or more electric refrigerators must be shown in the window. Any brand or brands may be displayed.

The idea of an electric refrigerator as a Christmas gift must be expressed directly or indirectly in the window.

One photograph of the window and a letter of explanation must be received by the Electric Refrigeration Bureau, 420 Lexington Ave., New York City, on or before Jan. 12, 1934.

Not more than one prize will be awarded to the same dealer or central station. In case of a tie for any prize, each of the tying contestants will receive the full amount of the prize.

It must be specified whether the window contains more or less than 100 sq. ft. of floor space.

For purposes of the contest, the term "dealer" is meant to include any sales outlet for electric refrigerators other than a central station. The judges are L. H. Coloney, Harvey F. Jackson, and Carl Percy.

Trilmont Salesmen to Get Bermuda Trip

PHILADELPHIA — Norge dealers and salesmen in this territory who make quota in the year-end sales contest sponsored by Trilling & Montague, Norge distributor here, will ring in the new year in Bermuda. The all-expenses-paid trip will be sponsored by the distributor Dec. 29 to Jan. 2.

Mercer Closes $663.50 Sale in 1 Hour

HUNTINGTON, W. Va.—In less than one hour, C. E. Mercer, salesman with Galperin Music Store here, sold a customer a Westinghouse range, washer, ironer, and refrigerator, totaling $663.50. Mr. Mercer joined the dealership just six months ago.

BELIEVE IT OR NOT...

This motor has 36 homes

WHEN a refrigerator dealer chooses a line, one of the first questions should be "where and how quickly can we obtain motor service when it is required?"

There's no vague answer when the Westinghouse Refrigerator Motor powers the machine. For, spotted from coast to coast, from Canada to the Gulf, are 36 Westinghouse service shops . . . and each of them is as well-equipped as the factory to service this motor. In densely populated areas, a local 'phone call brings Westinghouse service at once. Elsewhere, the nearest shop rarely is over a few hours distant.

Westinghouse service is there when you want it. But you'll seldom need it, as this motor is noted for its stamina.

When specified with Thermoguard protection, its built-in watchman makes "burn-outs" impossible. Its modern sound-absorbing mounting keeps it quiet permanently, because it has no rubber to deteriorate. It is designed so that no end-play noises can develop. Its simple design and special oiling system ward off trouble as well as keep power consumption at the lowest level.

It will pay you in saved service dollars to insist on Westinghouse refrigerator motors for the line you sell.

Westinghouse
Refrigerator Motors

GET ALL THE FACTS

Westinghouse Electric & Manufacturing Company
Room 219—Springfield, Mass.

Send us complete, detailed information on the Westinghouse FT Motor, especially designed for refrigerators.

Name .....
Position .....
Company .....T 79746
Address .....ERN 11-22-33

PURITY

SERVICE

• An added SERVICE to users of ESOTOO—Sulphur Dioxide.

VIRGINIA SMELTING COMPANY
West Norfolk, Va.

F. A. Eustis, sec., 131 State St., Boston and 76 Beaver St., New York.

A name that guarantees the Quality—Uniformity—and Reliability . . . and provides a new, dependable source of supply for

METHYL CHLORIDE

Refined and sold by the makers of

Extra Dry ESOTOO

under the most rigid care and restrictions. You will find both moisture and acidity reduced to the minimum.

Write for descriptive folder and information

RADIO TRADE STUNT STOPS TOWN TRAFFIC

SPRINGFIELD, Ohio—Hiram Miller and his wife Evilina not only stopped traffic, but made it turn and follow them, when they drove into town recently to carry out the best sales promotion stunt featuring Crosley radios ever used by Radio Electric Store here.

Their model T Ford piled high with farm produce, the Millers presented an unusual sight in their countrified "gay nineties" attire. It appeared they had read the Radio Electric Store advertisement, and had come to town to trade vegetables for a Crosley radio.

On busy street corners the equippage would halt and Hiram would climb out to inquire the way to the dealership. Pointing to a large Crosley advertisement in a newspaper he held, the farmer would ask about "That store whar they sold them thar Crosley radios and Shelvador 'lectric refrigerators." Correct instructions for reaching the store were often given.

Especially exciting were Hiram's frequent conflicts with the Springfield police.

Not being familiar with city regulations, he would stop in restricted zones, near fire plugs, etc., only to be ordered on by an irate officer. Loudly proclaiming his right to park where he pleased since he was a taxpayer and paid his taxes, Hiram would grudgingly drive away.

When the destination was reached, Hiram and Evilina both piled out of the car and gazed at the radios displayed in the dealer's window. They finally decided, not without prolonged argument, to settle on a Dual 14 model Crosley.

While the crowd watched, Hiram made the trade, giving his produce as down payment. The vegetables were then unloaded and replaced by the radio. The visitors finally drove off, waving to the amused crowd.

"Hiram" was played by Mr. Miller of Radio Electric Store, and the same stunt was repeated successfully the following day, with the addition of signs attached to the car advertising Crosley radios.

The event was a prominent feature of the dealer's "Crosley Days," two days in which Crosley products exclusively were shown in his store.

KELVINATOR ECONOMISTS TO AID XMAS CAMPAIGN

DETROIT—Kelvinator's home economics activity this fall centers around the Christmas Selling Campaign being put on by Kelvinator sales forces throughout the country.

Asking that distributor home economists "do everything in their power to assist their salesmen in the contest," Kelvin Kitchen has suggested various ways and means of doing this to the women in the field, as follows:

"1. Write a letter to each contestant in your territory, telling her how glad you are that she has entered the contest and that you hope she wins one of the 25 Kelvinators (by writing a winning letter on Kelvinator's merits); and that if she does you will be only too glad to come out and teach her all about Kelvinator's special features.

"2. Make a home service call immediately upon each purchaser, showing her just how Kelvinator can assist in her holiday preparations.

"3. Hold 'Open House' at least one day or night each week during November, bringing that up to twice a week during the first week of December, and all week long during the last two weeks of the contest.

In addition, Christmas teas, cooperative luncheons, fast-freezing demonstrations, and use of publicity in newspapers are recommended.

G-E Products Shown At N. Y. Food Show

NEW YORK CITY—General Electric products, exhibited by Rex Cole, Inc., New York G-E distributor, were one feature of the New York City Pure Food Show and Appliance Exposition held Oct. 21 to Nov. 3.

General Electric refrigerators were also used in exhibits of General Foods Corp., Hulbert Fruit Products Co., C. F. Mattlage & Son, Junket Co., and E-Z Freeze. Hills Brothers display featured a General Electric range.

Cooper Adopts Group Insurance Plan

CHICAGO—R. Cooper Jr., Inc., General Electric distributor here, has adopted an employes' group life insurance plan for approximately 300 eligible workers.

The program will be administered by the Metropolitan Life Insurance Co. on a cooperative basis, with employer and employes sharing the cost. Individual amounts of life insurance vary according to grade and range from $1,000 to $5,000.

The "Value Mark" of an Industry

When the time arrives for every reputable electric refrigerator to carry a grade mark of quality, many of the present costly, burdensome and retarding ills of the industry will disappear.

For many months we have been urging that the refrigeration industry adopt standards of permanent performance that would indicate to buyers—yes, and to dealers, too—the real difference between good, fair and poor refrigerators. It now is almost impossible for the buyer to distinguish one from another. The cheap job is touted as fervently as its legitimate betters. The difference in values ought to be made plain.

Every good element in the industry would benefit from such definite identification of quality. The makers of the best parts as well as complete refrigerators would be protected from the often extravagant claims and promises of those whose products are just cheap.

Dealers would be able to handle lines with clear cut assurance of their exact position in the quality field. And those dealers who want only the best and who are building a business for the future would be able to distinguish the best with certainty.

We are not entirely unselfish in this philanthropy. We know that if the industry is genuinely trying to build ***good*** refrigerators it will turn more gratefully to Dry-Zero. Any refrigerator insulated with Dry-Zero will stand any scientific test and show a remarkable saving in operating costs even in the first two or three years, often amounting to as much as 60%. Dry-Zero assures economical operation for the life of the refrigerator.

Dry-Zero Corporation, Merchandise Mart, Chicago, Illinois
Canadian Office: 687 Broadview, Toronto, Ontario

THE MOST EFFICIENT COMMERCIAL INSULANT KNOWN **DRY·ZERO**

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EDITORIAL AIMS

To encourage the development of the art.
To promote ethical practices in the business.
To foster friendly relations throughout the industry.
To provide a clearing house for new methods and ideas.
To broadcast the technical, commercial, and personal news of the field.

VOL. 10, NO. 12, SERIAL NO. 244, NOV. 22, 1933

Guidance Needed for Air Conditioning

T. K. QUINN, vice president of the General Electric Co., was buttonholed by the editor on a busy New York street one day, and asked how soon he thought air conditioning might "arrive" as an industry. The astute Mr. Quinn countered, like Socrates of old, with another question:

"What is air conditioning? Does anybody know?"

And perhaps when someone is able to answer that question, someone else may be able to predict with at least a measure of accuracy how soon the business of manufacturing weather for all types of needs can become a relatively stable industry.

Comfort cooling is undoubtedly something that has struck the public fancy. Everybody seems to want it, and everybody seems to expect that it, like television, is just around the corner. But those who embrace the idea so joyfully have no conception of the complex engineering problems and difficulties involved.

Ask an engineer about air conditioning, and he throws up his hands. Sometimes he gets wild-eyed, red in the face, and apoplectic. One gets the idea from his conversation that it's all too incomprehensible for the layman—in fact, you shouldn't have mentioned it.

Nor is the engineer who thinks air conditioning so hopelessly involved, so far wrong. He can't find many of his brother engineers who will agree on anything concerned with the topic. Moreover, he looks with increasing disfavor, and even despair, upon the rapidly multiplying number of companies entering the air-conditioning field these days—and with still greater disfavor upon the products they are introducing.

It seems generally agreed by the engineering fraternity that most of the products which are labelled "air conditioning" these days do not deserve the term at all. They may perform one of the functions which, taken together, comprise air conditioning, but very few companies manufacture equipment to do a complete air-conditioning job.

In fact, there are not a few executives who are convinced that the term, "air conditioning," has been ruined, and that a new word or phrase must be coined.

There is a certain class—and a very large class it is, too—of business men who rush madly to the head of the line when anything new comes out which the public seems predisposed to buy. Beer gardens sprang up all over the nation almost over night, like filling stations. A vast number of them, of course, were unjustified, and are now as empty as a vaudeville house when Aimee Semple McPherson is on the bill. Today there's a grand scramble for whisky permits. Household electric refrigeration had its avalanche of dealer interest for awhile, an avalanche which began to back up hill when the whyncha-c'mup-'n'-see-me-sometime type of retailers discovered the tough competition they were up against.

And now air conditioning is getting its share of attention from the opportunists who are out to sell anything the public wants, whether what they have to sell will do the job or not. As a result, many far-thinking executives feel, the "legitimate" air-conditioning industry may be damaged considerably, and even assert that, if the inroads of inexperienced merchandisers (inexperienced from the standpoint of air conditioning, that is) continue, the damage may be irreparable.

A patent attorney recently pointed out to the editor of ELECTRIC REFRIGERATION NEWS that patents on air-conditioning devices have been coming into the United States Patent Office at the rate of *three hundred a day!* A special department of the Patent Office has been established to take care of this colossal influx of patent applications.

This condition is alarming to many of the old-timers in the industry, for they feel that air conditioning may become hopelessly involved, entangled, and tied up in a few years unless some method of straightening out the patent situation is devised and effectuated.

That all this activity, both on the part of engineers and merchandisers, indicates tremendous interest in air conditioning is surely evident. The big problem is to control the interest, and keep the whole thing from going haywire.

Leadership seems to be wanted. Those who have good products which will do an honest job can best protect themselves from the chiselers by educating the public on the needs and functions of comfort cooling, and on the types of equipment which will prove satisfactory. In other words, some standards need to be set.

Some of the bigger companies, concerns like Carrier, Sturtevant, York, and others which have been in the business for a long time, have been taking steps to clarify the patent situation, and have been taking thought as to how the over-eager fly-by-nights might be curbed. Action of this sort seems to be indicated, and will undoubtedly help keep an industry of great promise off of shoals which might delay for many years its voyage to satisfactory profits.

WHAT OTHERS SAY

T.V.A. TO ELECTRIFY THROUGH SALES

IN his Atlanta address David E. Lilienthal announced a new and constructive policy for T.V.A. He admitted there already existed excess private utility generating capacity and stated that the government projects would merely add more, unless people used more electricity. Thus the problem for private utilities and for the government is the same—more sales.

It will be interesting to see T.V.A. become a salesman—mor particularly an appliance salesman. For many years the electrical industry has tried to sell. It has found that low rates alone will not sell. It has found that every method used to sell appliances is expensive and slow in accomplishment. Despite the expert sales and business talent available the domestic market has resisted sales efforts except under special conditions.

Now T.V.A. will try to do this sales task quickly. It has plenty of money; it has no inhibitions; it is ambitious and it can secure the cooperation of the entire electrical industry in a logical sales program. We can say very frankly that it will make slow progress if it uses the ordinary distribution methods and high-pressure specialty selling. It must use new methods and new ideas. Possibly one step is to put all electrical appliances and services in about 10,000 homes free of cost in two or three sections and convert the people through trial use. Possibly other new and radical methods can be used. The important point, however, is that T.V.A. realizes that the problem is one of sales and not a building problem. We hope that it tries out selling and gets at least a sample of an electrified America before it continues to build excess generating capacity. For it is possible that T.V.A. will be no better as a salesman than the electrical industry has been, in which case years must elapse before returns can be had on the taxpayers' money used by the T.V.A.—*Electrical World*, Nov. 18, 1933.

STEAM COOLING FORGES AHEAD

ONE of the surprises of the current year has been the ready acceptance which steam refrigeration has found. Even in an off year in building construction the tonnage of this type of refrigeration which has been installed is beyond expectation. On air-conditioning work where large size units are required this method of producing chilled water has much to commend it and engineers have been quick to recognize this fact.—*Heating and Ventilating*, Nov., 1933.

LETTERS

Speedy Service

Melchior, Armstrong, Dessau Co.
116 Broad St., New York City
Nov. 18, 1933.

Editor:

We are today in receipt of your communication of the 16th in which you furnish us the latest ruling of Mr. C. Sterry Long, Assistant Deputy Administrator, Division No. 4, which is to the effect that outside commission salesmen are exempted from the minimum wage provisions of the retail code.

We wish to take this opportunity of thanking you for bringing this ruling to our attention, and of congratulating you on the splendid service furnished us in pointing out this important matter.

A. DESSAU.

FIRST COPELAND SENT TO SMITHSONIAN INSTITUTE

(Concluded from Page 1, Column 4)

nection to a household cabinet, has been reposing inside a glass case in the Copeland lobby, and was offered to the Smithsonian Institute by officials of the Winslow-Baker-Meyering Corp. (new owners of the Copeland company) at the suggestion of James W. Beckman, public relations counsel, who made arrangements for the event.

Local Representative Talks

First speaker of the afternoon was A. P. Brewer, manager of the Mt. Clemens Board of Commerce, who expressed civic satisfaction at the reorganization of the Copeland company and plans of its new owners to continue in the refrigeration business.

Next was Mr. Beckman, who outlined briefly some of Mr. Copeland's early difficulties in the development of electric refrigeration. The first successful one was the 15th model, he said, and was built in 1918 after four or five years experimentation. It was found a year ago in the Grosse Pointe home of Joseph T. Schlacks, one-time head of the McCord Mfg. Co., and taken to the Copeland lobby in exchange for a late model.

Copeland Speaks

Mr. Copeland was then introduced as "the father of electric refrigeration."

"I got into the electric refrigeration business by accident," he said, "and eventually invested so much money in development work that I had to stick with the accident," he said.

The two most difficult devices to perfect were the thermostatic control and the compressor seal, he remarked. About $125,000 was spent in developing the control, he declared, and that after companies like General Electric, Minneapolis-Honeywell, Fulton, Johnson Regulator, etc. had tried it and given it up. The seal was an outgrowth of the old-time stuffing box, and has been little changed from that time until now, he averred.

Started Research in 1913

Returning to Detroit with Mr. Copeland, the writer learned some interesting things from and about him. His first refrigeration experiments were started in 1913 at his home, and subsequently extended under the banner of the Electro Automatic Refrigerating Co. (forerunner of Kelvinator Corp.).

The name Kelvinator was suggested by Stanley Reason of J. Walter Thompson Co. and J. Kemphert, editor of *Popular Science Monthly* who had collected information for an article on automatic refrigeration from Mr. Copeland.

In 1918 when the organization got into actual production, the name of the company was changed to Kelvinator Corp. and the refrigerators called Kelvinators. Partner with Mr. Copeland in this stage was A. H. Goss.

In 1921 Mr. Copeland left the Kelvinator company, and in 1923 started Copeland Products, Inc., in Flint, Mich. Here isobutane was developed for household refrigeration, with the assistance of Harry Edwards of Union Carbon & Carbide Corp. Mr. Copeland's term of service with this company was five years.

Practical Engineer

A man of about 50, he is a *practical* engineer, with no academic training in technical subjects, but with a background of many development projects, many successfully completed. He admits having sunk large sums of money in electric refrigeration, but is now a man of very moderate means.

His latest venture is the mining of tin in South Carolina where, he declares, newly discovered ore yields 13½ per cent tin content (according to tests in his laboratory) as compared with that imported from Singapore which yields only 4½ per cent tin. This project is expected to bring a new industry to this country.

Waddell Rewards New England Norsemen

(Concluded from Page 1, Column 5)

list of eligibles with their watches, rings, checks, emblems, and certificates.

Norge Officials Present

Speakers of the evening, in addition to Mr. Waddell, included John H. Knapp, vice president in charge of sales of Norge Corp., Glenn O'Harra, eastern sales manager and vice president of Norge, Byron H. Spinney, Norge distributor in Springfield, Mass., and George F. Taubeneck, editor of ELECTRIC REFRIGERATION NEWS.

Mrs. Rachel Galbreath of the Penholm McKay Co., Worcester, Mass., was publicly honored for her efforts in becoming America's second Viqueen.

Salesmen at Meeting

Among the Vikings and Norsemen present were:

Leo Eskin and Frank Coyle, Providence, R. I., branch; A. A. Amirault, No. Weymouth Garage, No. Weymouth, Mass.; H. Anderson, Glazer Furniture Co., Worcester, Mass.; Ed. Bass, Union Elec. Supply, Boston, Mass.; Louis Bornstein, Boston Furniture Co., Hudson, Mass.; Irving Botuc, Star Trading Co., Worcester, Mass.

Louis Etstein, Broadway Vulcanizing, and J. A. Collins, Collins Elec. Supply, Lawrence, Mass.; P. DeRomas, DeRomas Bros., Norwood, Mass.; Thornton Elwell, Hawkins Elwell Co., Dorchester, Mass.; Lesley Flynn, Glazer Furniture Co., Worcester, Mass.

G. T. Gerard, Gerard Furniture Co., New Bedford, Mass.; Stacy Goodrum, Alden Walker Co., Baintree, Mass.; Maurice Gilman, Gilman's, Inc., Chelsea, Mass.; David Groman, Shirley Hdwe. Co., Winthrop, Mass.; P. Guglielmi, Quincy Maytag Co., Quincy, Mass.

David Hershon, Hershon Supply Co., Cambridge, Mass.; F. A. Jenness, Wollaston, Mass.; Joseph Kaufman, Union Elec. Supply, Boston, Mass.; A. J. LeClair, LeClair Radio Shop, Beverly, Mass.; F. J. Leone, Leone Maytag Co., Lawrence, Mass.

W. McGowan, Houghton & Dutton, Boston, Mass.; John Mack, United Music Co., Webster, Mass.; T. D. Mullen, Morse & Mullin Co. Canton, Mass.; Jack O'Brien, O'Brien's Service Station, Framingham, Mass.

Marcus Rose and Paul Rose, Werber & Rose, Milford, Mass.; Gene Savage, H. H. Savage Co., Boston; C. W. Towse, Danbury Light & Power, Danbury, N. H.; J. C. Wayner, Starkweather & Williams, Providence, R. I.; Max Werber, Werber & Rose, Milford, Mass.; W. C. Wilbor, W-B Radio, New Bedford, Mass.; C. I. Winograd, Central Auto Supply, Nashua, N. H.

George Brennan, Summerfield's, Boston; J. A. Charland, T. W. Rogers Co., Lynn, Mass.; Edward Corey, Summerfield's, Boston; J. J. Craven, Hawkins Elwell Co., Dorchester, Mass.; C. M. Day, Union Elec. Supply Co., Boston.

Reney Dumas, W. B. Radio Co., New Bedford, Mass.; Joseph Elowitz, Shartenberg's, Pawtucket, R. I.; H. H. Gile, Russell & Giles, Windsor, Vt.; A. J. Gott, A. J. Gott Co., Arlington, Mass.; C. B. Grapes, Corner Garage, Lyndonville, Vt.

William L. Hanlon, T. W. Rogers Co., Lynn, Mass.; Ed. Hartwell, Hartwell Kelton Co., Brockton, Mass.; J. F. Hogan, H & H Oil Burner Co., Everett, Mass.; E. F. Jackson, T. W. Rogers Co., Lynn, Mass.; J. W. Keedwell and W. E. Kelton, Hartwell Kelton Co., Brockton, Mass.

E. R. Kimball, T. W. Rogers Co., Lynn, Mass.; A. C. Lake, A. C. Lake Co., Nantucket, Mass.; J. W. Lanigan, Summerfield's, Boston; G. E. Lantagne, F. J. Leone Co., Lawrence, Mass.; Ralph Longfellow, Summerfield's, Boston; I. S. Low, Low Supply Co., Providence, R. I.; J. S. MacLaren, Hamilton Wenham Garage, So. Hamilton, Mass.

A. W. Mawbey, Hartwell Kelton Co., Brockton, Mass.; Henry Mittell, E. M. Chase Co., Manchester, N. H.; Henry Mowles and M. H. Mowles, Summerfield's, Boston; J. T. Mullen, Hartwell Kelton Co., Brockton, Mass.

Harry Nangle, Topsfield Motors Co., Topsfield, Mass.; A. W. Nelson, A. W. Nelson, Inc., Medford, Mass.; Samuel Noyes, Summerfield's, Boston; Edward O'Heir, O'Heir Furniture Co., Lowell, Mass.; Chester Rooney, Summerfield's, Boston; Philip Rosenfield, Middlesex Elec. Co., Waltham, Mass.

R. R. Scruggs, Woodsville, N. H.; Gordon B. Seavey, F. K. Johnson Co., Lexington, Mass.; J. A. Stoddard, Boutwell Lumber Co., Concord, N. H.; K. G. Temple, Andover, Mass.; W. I. Thayer, Gilchrist Co., Boston; W. A. Thompson, Thompson Hdwe. Co., Lowell, Mass.; William Vickers, Vickers Elec. Co., Farmington, N. H.; X. F. Yurt, Supreme Radio Co., Brighton, Mass.; Mrs. Rachel Galbreath, Penholm McKay Co., Worcester, Mass.

R. F. Black, Arrlow Electric Co., Dorchester, Mass.; T. A. Corcoran, Belmont, Mass.; H. A. Curtis, Gilchrist Co., Boston; T. H. Evans, Gammons Co., Plymouth, N. H.; Nathan Gerber, N. Gerber Co., Roxbury, Mass.; G. T. Hoyt, Houghton & Dutton, Boston.

F. J. Kolb, K. N. Sales & Service, Lawrence, Mass.; Samuel Kaufman, Union Elec. Supply Co., Boston; P. L. Lavine, Bay State Auto Supply, Worcester, Mass.

D. G. Lewis, Houghton Dutton Co., Myer Machkowsky, Star Lighting & Fixture Co., Abe Marks, Abe Marks Co., Nicholas Moscato, N. Moscato Co., Jack Polak, U. S. Electric Appliance, Harold Ryan, Summerfield's, all of Boston.

Samuel J. Smith, United Music Co., Webster, Mass.; A. H. Vergobbi, Modern Home Appliance Co., Weymouth, Mass.; James Vincent, Somersworth, N. H.; J. C. Wayner, Starkweather & Williams, Providence, R. I.; R. M. Galbraith, Denholm McKay, Worcester, Mass.

D. P. Murphy, David C. Finn, L. J. McAllister, J. J. Moore, Jr., Nathan Feldman, Myer Finberg.

Aram Gavoor, Wilbur Hawkins, Joe Kaufman, Percy Lavine, William Levine, Jack Polak, David Sherman.

LEONARD INSTITUTES 4-YEAR SALES PLAN

DETROIT—A four-year plan of merchandising and its objectives were revealed to 150 distributors, members of their organizations, and district managers at the convention of the Leonard Refrigerator Co. held here last Friday and Saturday.

Business sessions of the convention were held Friday morning and afternoon at the Players Club, while the annual banquet took place in the Crystal ballroom of the Book-Cadillac hotel.

After breakfast at the factory Saturday morning and an inspection of the plant, the visitors were taken by special train to Ann Arbor to see the scoreless Michigan - Minnesota football game.

Distributors in 'Black'

Every Leonard distributor in the United States was "in the black" as far as his refrigerator business was concerned at the end of the last fiscal year, ended Oct. 31, said H. W. Burritt, vice president in charge of sales, during the business sessions. In unit shipments, the company finished 51 per cent ahead of the preceding year, he added.

During Friday's sessions, fellow executives "pinch hit" for Godfrey Strelinger, Leonard sales manager, who is ill with pneumonia. Mr. Burritt took his place as presiding officer during the business sessions, and Willard S. French, president of Brooke, Smith & French, Inc., Leonard's advertising agency, delivered Mr. Strelinger's official address.

George W. Mason, president of the company, analyzed current economic conditions and outlined the company's policies for the coming year.

Introduces New Line

R. R. Ludington, assistant sales manager, introduced the new line. G. M. Evans, vice president in charge of manufacturing, discussed the new line from the engineering standpoint.

Charles M. Armstrong, vice president of the Refrigeration Discount Corp., outlined ReDisCo's 1934 plan of cooperation with Leonard distributors, dealers, and buyers.

"Checking Up on Our Advertising" was the subject of E. L. Trifflitt, vice president of Brooke, Smith & French, Inc., who analyzed Leonard's national consumer advertising for 1933, and gave a hint as to 1934 policies.

Sam C. Mitchell, Leonard's new advertising and sales promotion manager, went fully into details of 1934 merchandising activities, and introduced to the distributors the tools that they will use.

Present at the convention were the following:

L. N. Bloom, E. S. Hershberger, C. P. Humphries, W. H. Wilson and A. C. Beydle of B. W. Smith, Inc., Cleveland; P. L. Thornburg and C. B. Park of Foster-Thornburg Hardware Co., Huntington, W. Va.; C. H. Lines and Messrs. Palmgreen and Randall of C. H. Lines Co., Fort Wayne, Ind.

R. B. Gargett, J. C. Richardson, and Irving Sampson of Columbus Ignition Co., Columbus, Ohio; J. L. Berry, Harry Skinner, and Ed Tullis of Electric Range & Equipment Co., Toledo; S. C. Kahn, Jack Cain, and William Holt of Capital Paper Co., Indianapolis.

R. A. Utter and J. Zweedyk of H. Leonard & Sons, Grand Rapids, Mich.; F. E. McWhirter and Walter Nilson of General Distributing Co., Saginaw, Mich.; C. W. Strawn, K. J. Ritter, C. C. Sheets, A. D. Kelly, C. F. Gorham, C. Schlink, A. N. Doty, and L. H. McLoskey of Buhl Sons Co., Detroit; H. B. Alderman, O. J. Stayley, and E. R. Dierke of H. B. Alderman, Inc., Buffalo.

C. L. Hartman, Roy Prairie, and Frank Stubbs of C. L. Hartmann Corp., Rochester, N. Y.; M. E. Golomb, W. C. McClelland, C. J. Hardy, Jr., and F. E. Gould of J. A. Williams Co., Pittsburgh; L. J. Warner and F. O. Blake of Warner Distributing Corp., Syracuse, N. Y.; F. C. Ferber, A. F. Carroll, and E. W. Ament of Southern Wholesalers, Inc., Washington.

Julius Klein, W. L. Brous, A. Seidensticker, G. J. Ellis, D. M. Crawford, Harold Tiley, A. Sichel, John Brownsback, James Black, and Joseph Aarons of Klein Stove Co., Philadelphia; W. D. Stuart, Jr., Richmond Hardware Co., Richmond, Va.; L. E. Latham, R. E. Hunting, W. T. Ohman, R. F. Downing, and Jim Henry of E. B. Latham & Co., New York City.

I. D. Newman, J. Tarlow, and W. G. Miller of H. M. Tower Corp., New Haven, Conn.; A. M. Nichols, Jr., C. K. Godfrey, and H. R. Tracy of Ballou, Johnson & Nichols Co., Providence, R. I.; J. H. Burke, T. E. Burke, and J. F. Burke of J. H. Burke Co., Boston; David Thomas of Cressey & Allen, Portland, Me.

L. S. Ramsey of Vermont Hardware Co., Burlington, Vt.; G. W. Henzel, W. A. Griswold, and Max Swire of E. S. & E. Co., Inc., Albany, N. Y.; F. A. Houlihan of Moller's, Inc., Cambridge, Mass.; L. C. Wiswell, J. C. Wiswell, H. O. Kennedy, L. C. Wiswell, Jr., F. C. Viola, and W. D. Roche, L. C. Wiswell Co., Chicago.

M. S. Livingstone and Harry Cohen of Auto Equipment Co., Omaha; A. Van Antwerpen and W. H. Roth of Radio Specialty Co., Milwaukee; A. A. Schneiderhahn of A. A. Schneiderhahn Co., Des Moines; C. A. Winne and F. A. Forster of Winne Sales Co., Minneapolis.

A. M. Cronin of Cronin Distributing Co., Portland, Ore.; A. S. Allen of Seattle Hardware Co., Seattle; W. C. Weaver, L. T. Hudson, and W. C. Weaver, Jr., of McWhorter-Weaver Co., Nashville; J. P. Newsome and William McAllister of Watts-Newsome Co., Birmingham, Ala.

J. C. Brown and A. P. Miegel of Brown Distributing Co., Atlanta; Mr. and Mrs. O. K. Spurrier of Spurrier's, Inc., Oklahoma City; J. Criscadoro and J. G. Aldige of Radio Specialty Co., New Orleans; Lloyd Darby and Wakefield Taylor of Taylor Distributing Co., San Antonio, Tex.

W. P. Chrisler, H. B. Levy, G. S. Scofield, and Henry Free of Aeolian Co. of Missouri, St. Louis, Mo.; Sidney Stineau and Carl Narz of Smith Radio Co., Louisville; R. R. Crum and R. R. Thomason of Linn & Scruggs Dry Goods & Carpet Co., Decatur, Ill.

Paul Harris of Cohen Furniture Co., Peoria, Ill.; E. C. McKelvey of E. C. McKelvey Radio Co., Salina, Kan.; E. L. Stimpson of Stimpson Sales & Investment Co., Wichita; L. E. Cox of General Supply Co., Springfield, Mo.; N. B. Williams and K. J. Scharfenberg of Williams-Philco Co., Peoria, Ill.

A. A. Wenstrup, T. M. Williams, George Schumacher, and C. J. Heitz of Tri-State Distributing Co., Cincinnati; L. M. Kelly and Carl Clinkenbeard of Kansas City Philco, Kansas City, Mo.; J. G. Hambly of Graham Hambly & Son, Los Angeles; H. R. Curtiss, H. R. Curtiss Co., San Francisco.

WESTINGHOUSE LAUNCHES XMAS SALES PROMOTION

MANSFIELD, Ohio—To stimulate Christmas refrigerator sales, Westinghouse Electric & Mfg. Co. is employing special advertising and promotional material reflecting the spirit of the holiday season.

Poster and folder advertisements are based on a picture of two babies, a rich child and a poor child, one of which says to the other, "My mother wants a Westinghouse Refrigerator for Christmas," to which the reply is, "So does mine."

Three additional slogans have been provided for newspaper copy. Santa Claus remarks, in the first layout, "Bet your life! They're *my* choice this Christmas!"

In keeping with the sentiment for repeal of prohibition is the second slogan, "Ps-sst . . . Santa Claus! Look at this oversize ice compartment," and the third shows a small boy pointing to a Westinghouse with the exclamation, "Hey Dad! Look! Just what Mamma wants this Christmas!"

FEDDERS EQUIPMENT USED IN BUFFALO NIGHT CLUB

BUFFALO—The Palms, one of Buffalo's largest restaurants and night clubs, is using all Fedders electrically refrigerated equipment to serve its beer-cooling needs.

Precooling is accomplished in the keg-storage room in the basement by means of a Fedders "Forceddraft" unit cooler. From the keg-storage room, the beer is pumped upstairs to two Fedders remote-type cabinet coolers, each equipped with two spigots and Fedders cooling coils. The entire system is automatic in operation.

UTILITIES ENGINEERING CO. TO SELL PARTS

CHICAGO—To handle refrigeration parts and supplies, the Utilities Engineering Sales Co. has been organized with headquarters the same as Utilities Engineering Institute.

The new company has just issued its first catalog, showing Mueller valves and fittings, Imperial service tools, Kerotest charging stands, U. S. gauges, Turner halide torches, Henry charging connections, Dayton belts, Ansul sulphur dioxide, gaskets, and motor brushes.

21 WESTINGHOUSE COOLERS SOLD IN CINCINNATI

CINCINNATI—Tafel Refrigeration Co., Inc., Westinghouse distributor, has announced a number of large water cooling installations in the Cincinnati metropolitan area.

Burck-Bauer, dealer, recently sold 14 WT-501 water coolers to the Cincinnati & Suburban Bell Telephone Co. for use in each of their exchanges.

Six new water coolers are being installed for Gulf Refining Co. service stations, making a total of 16 installed for this purpose in Cincinnati.

ROWLES SELLS 100% OF NORGE DIVISION QUOTA

DETROIT—Second Norge divisional manager to sell 100 per cent of quota in his entire territory this year and receive membership in Norge Corp.'s honor society, Ymir Lodge of the Viking Club, is W. C. Rowles, southwestern sales manager. J. R. Blocher was first to win membership in this division of the club.

PERRY MADE ASSISTANT G-E SECRETARY

NEW YORK CITY—Wayne H. Perry, employed in the office of J. W. Lewis, assistant to President Gerard Swope of General Electric Co., has been made an assistant secretary of the company, and will have offices in the G-E building here.

Electric Kitchen Rents Apartments

EVANSTON, Ill.—Within a week after new electric kitchens were installed in apartments of the Library Plaza hotel here the apartments were rented out to desirable tenants, according to Earle P. Press, manager.

Westinghouse equipment is installed in the kitchens of the apartments.

The new kitchens replace ones which were equipped with ice boxes, wooden sinks, and other antiquated equipment, and it was because of the lack of modern equipment that the apartments were unoccupied, according to Mr. Press.

Twenty-four old kitchens were modernized, and 10 new kitchens were equipped, all kitchens using a Westinghouse model WL-30 refrigerator and CL-621 range, combined with Elgin steel kitchen cabinets.

62% OF OIL BURNER FIRMS FILE PRICES

NEW YORK CITY—With reference to compliance with the oil burner code in the matter of filing prices, the Oil Burner Code Authority has announced that 62 per cent of the manufacturers contacted had filed prices as of Nov. 1.

Prices have also been filed by some 1,000 dealers, but this is only approximately 10 per cent of the total number that must file. The Code Authority has sent out a statement to the effect that "there is no reason for dealers to delay in filing the prices required by the Code Authority, these prices being simply the current prices of the dealers which may be modified or adjusted later if desired."

"The beneficial distribution of prices, among all branches of the industry, awaits a more nearly complete return of the industry's prices," declares the statement of the Code Authority.

Buhl Sons Distributes Standard Ranges

TOLEDO—Buhl Sons Co., Detroit Leonard refrigerator distributor, has been appointed distributor of Standard electric ranges for eastern Michigan.

Distribution of Standard ranges in other sections of Michigan is handled by Morley Bros. of Saginaw, Independent Electric Co. of Muskegon, Capital Electric Supply Co. of Lansing, Home Modernizing Co., South Bend, Ind.

Whenever—wherever—electrical refrigeration is discussed, products of Universal Cooler manufacture are invariably mentioned as good units, always to be relied upon for efficient and dependable performance.

UNIVERSAL COOLER CORPORATION
DETROIT, MICHIGAN BRANTFORD, ONTARIO

MANUFACTURERS OF A COMPLETE LINE OF HOUSEHOLD AND COMMERCIAL REFRIGERATION EQUIPMENT

ENGINEERING

REYNOLDS FOIL TO BE PUT UP IN PADS

(Concluded from Page 1, Column 3)

devising methods of fabricating the foil, the announcement states.

The Reynolds company recently introduced to the building industry a variety of forms of aluminum sheeting for the insulation or "metallation" of houses.

Now the company has begun a production of rolls of aluminum foils for the "metallation" of refrigerators of all models and sizes, Reynolds engineers declare. They claim an efficiency for these pads of as low as .21 B.t.u. in conductivity, depending upon the construction of the pad.

The pads are simply a series of layers of the metal sheets, built in the Reynolds plant and shipped to refrigerator manufacturer ready for installation.

It has been found that ½ lb. of the aluminum sheeting is all that is required for the smaller household models. Frigidaire Corp. reports that it has been able to reduce the weight of its small cabinets 75 lbs. by using aluminum, Reynolds men say.

Main feature of the insulation is reflectivity of radiant heat in the polished surface of the aluminum sheeting. "Only a small amount of radiant heat can be emitted from one surface of the aluminum to another, and little is absorbed, one sheet from another. Each sheet reflects approximately 95 per cent of radiant heat," Reynolds engineers claim.

Heat carried by convection (air movement) is limited since the spaces between the sheets are so narrow that no considerable movement is possible.

Another feature of the product is the fact that cabinet walls need not be so thick as formerly, it is claimed.

Refrigeration Control and Electric Refrigerator Manufacturers

for license to manufacture and sell

A COMPLETE CONTROL WITH DEFROSTING (by manually starting) WITH AUTOMATIC RETURN TO NORMAL OPERATION AFTER DEFROSTING, also if desired with the above a COLD CONTROL WITH AUTOMATIC RETURN TO NORMAL OPERATION AFTER REACHING DEGREE DESIRED, also DEFROSTING REFRIGERATORS IN MULTIPLE INSTALLATIONS SUCH AS (apartment houses) individually and as desired by each tenant without stopping compressor and with automatic return to normal operation after defrosting is completed. "A COMPLETE CONTROL."

PATENTED AND PATENTS PENDING

Also some prior art disclosures established. Write or wire

THOMAS K. MARBURY, 1256 Carr Ave., Memphis, Tenn.

A.S.R.E. HEARS TALK ON BREWERY COOLING

(Concluded from Page 1, Column 1)

the process and in the materials used.

"Principal ingredient in beer is the malt," he said. "This is merely whole barley which has been allowed to sprout. After it has produced roots and the first leaves, growth is stopped and the grain is thoroughly dried.

"The result is malt, which differs from barley in that enzymes have been formed in the grain which have the property of digesting starch to sugar. In the past, most breweries made their own malt, but today it is generally purchased from outside sources."

Two general methods of brewing are in use, Mr. Hadfield explained. In the diffusion, or old American method, the malt is steeped but the temperature is not raised sufficiently high for it to be cooked. In the decoction method—usually practiced in Germany—the malt is cooked in successive stages.

Before being used, the malt must be ground. This grinding is very important as to fineness, for in different processes the fineness of the malt affects the reaction.

In America, corn flakes or rice is often used with the malt. This provides more starch for conversion to sugar. The kind of barley is also very important as it greatly affects the flavor and color of the beer.

"After grinding," continued Mr. Hadfield, "the malt is mixed, in the mash tub, with water at about 100° F. The mash is allowed to steep for a short time after the temperature is raised in 10° to 15° steps to 167° F. Between 127° and 167°, conditions are right for converting the starch to sugar. Above 167° the enzymes are killed so the process stops at that point.

"The bottom of a mash tub is funnel-like in shape, and after the heating process is complete, the liquid is drained down through the mash.

"If the liquid should be cloudy in appearance, it must be returned to the tub and drained through again. After being drained, the mash is rinsed with water to remove any sugar which may have been left. The solid residue is taken out, dried and sold as stock feed."

The extract, or wort, is taken to a brew kettle where it is boiled down to the proper consistency. In the brew kettle are added hops, which produce a part of the flavor.

In the decoction method, two mash kettles are used. All mash is placed in one kettle until 100° is reached. Half the mixture is removed to the second kettle where it is gradually raised to 167°. It is held for a while at this temperature and is then boiled.

The boiled mash is returned to the first kettle which raises the temperature of the first half, and after being mixed, one half is again drawn off and boiled as before. When the two halves are mixed a second time, the resulting temperature is 167°, where conversion of the starch to sugar is finished.

This process is more complete than the one first described giving 8 to 10 per cent more beer for a given amount of the mash, Mr. Hadfield observed.

"The mixture next goes to another vessel where the liquid is separated from the mash. The resulting wort is usually boiled about three hours, at which time there occurs a 'break' where the somewhat cloudy liquid clears. In the newer German method the evaporation of a kettle is as much as 12 per cent per hour," the speaker stated.

"After evaporation, the wort is run through a strainer to remove the hops and is then cooled to its fermenting temperature of about 45°. In the initial cooling, a large pan or bowl is frequently employed, which maintains a liquid depth of about 12 in.

"It is important that the beer be free from contamination, for which reason the room must be air conditioned. Additional solids including albumen also settle out during the initial cooling process.

"From the cooling bowl, the wort is run through a Baudelot-type cooler where the cooling process is completed and at the same time the water is aerated. Upper coils of the cooler are refrigerated with water which becomes warm and is later mixed with the wort for initial cooking. Brine or ammonia refrigerates the lower coils."

Next step is fermentation, the wort being led into fermenting vats and the yeast added. According to Mr. Hadfield, considerable heat is generated during the fermenting process which must be removed through refrigeration.

Several coils are placed inside the fermenter to accomplish this, while the fermenting room is generally held between 37° and 38°. The room must be supplied with plenty of fresh air because of the large amount of carbon dioxide given off.

Yeast supply presents an extremely important problem, said Mr. Hadfield. In starting a brewery, yeast is generally obtained from a laboratory to insure proper pedigree of the supply. Great care must be taken that no wild yeast spores from the air become mixed with the yeast supply as these would ruin the yeast action.

Fermentation period covers about 10 days. Before fermentation, the liquid is called wort; afterwards it is called beer. After the fermenting process is complete, the beer is cooled to 42° and sent to the storage cellar, where additional fermentation takes place during the storage period.

YORK EQUIPMENT USED TO REFRIGERATE FLOWERS

PHILADELPHIA — York Ice Machinery Corp. has installed a special refrigerating system in Pennock's floral shop on Chestnut St. here. The York installation replaces mechanical refrigerating equipment installed many years ago.

A York water-cooled condensing unit, operated by a 2-hp. motor, is installed in the basement. Special York coils of the non-frosting "square-fin" type were placed in the florist display case, which is 36 ft. long.

The display case is divided into three compartments, and the temperature in each compartment is regulated by a separate thermostat.

Square-fin coils are also installed in the 10x20-ft. storage room. In both the display case and storage room, the temperature is maintained between 48° F. and 52° F.

"I have found several advantages in the non-frosting coils," declares J. Liddon Pennock, proprietor of the floral shop.

"Formerly it was necessary frequently to remove an accumulation of frost from the coils. Flowers are even more sensitive to changes in temperature and humidity than human beings. The frost on the old coils seemed to affect the flowers in much the same way as a frosty day affects our throats.

"But with the new system, the coils are never frosted, only moist and wet, and the blooms seem to thrive better.

"Another advantage of our new refrigerating system is that it shortens the time necessary for what we call the 'hardening off' process. When we get an order for chrysanthemums or other cut flowers, it is customary to cut the tips of the stems and place the flowers in water for several hours before delivery.

"With my old system, I sometimes kept the flowers in water for 24 hours. Now I have reduced the 'hardening off' time to 12 hours. This is an advantage during a busy period, such as before a football game. The percentage of waste through premature wilting, due to a dry atmosphere, has been cut down."

Long Liquid Carbonic Bar Used at Ball

CHICAGO—The 100-ft. long Liquid Carbonic bar which was in operation at the Second Annual Exposition of Brewing Machinery, was pressed into service for the annual Chicago Artists and Models ball, held here recently.

The bar is equipped with 25 draft arms, in five different cooling sections, with Liquid-Zahm beer cooling and control units for each section.

In Liquid-Zahm systems the beer, instead of being pumped through refrigerated beer coils, is forced, by pressure of CO_2 gas, into vertical cylindrical silver-lined tanks holding about 3 gal. each.

A silver-plated ball float inside the tank opens and closes valves as it rises and falls. Beer enters near the top and is drawn off at the bottom. Pressure on top of the beer in the tanks is held uniform by automatic valve action.

LIQUID CARBONIC OPENS NEW DISPLAY ROOM

CHICAGO — A downtown display room at 621 S. Wabash Ave. here, has been opened by Liquid Carbonic Corp.

THAT BED TIME SNACK *tastes better out of a* CLEAN REFRIGERATOR

WHILE the refrigerator may have all of the sanitary qualities provided by good housekeeping, it is impossible to really *clean* cracking, chipping enamel, or the rust that may lie beneath it.

The careful housekeeper distrusts the good intentions of manufacturer or dealer who sells her a refrigerator with unreliable cabinet finish. It is cheaper to make sure of the finish in the first place. The cost of rust prevention is negligible, but the loss of a customer is irreparable.

With Bonderizing under the enamel or lacquer, complete cleanliness can be maintained for the life of the unit. Bonderizing provides an absorbent base for the final finish that prevents untimely cracks and scars. It furnishes a base to which the finish clings with unfailing efficiency.

Bonderizing provides goodwill insurance so necessary to continued customer satisfaction. It adds sales and actual utility value far beyond the reasonable cost of application.

Parker literature summarizes the findings of the Parker research staff. It describes their more important findings in 17 years of research, supported by extensive practical experience in rust-proofing and finish improvement of iron and steel products in all industries. Copies will be sent on request to interested technical men and manufacturers.

PARKER RUST-PROOF COMPANY
2197 East Milwaukee Avenue
Detroit, Michigan

PARKER RUST-PROOFING *processes*
BONDERIZING
PARKERIZING

New!

A Plain Tube Shelf Coil

Now Over 45,000 Larkin Coils in Daily Use

THIS Plain Tube Shelf Coil is an auxiliary coil to be used under the shelves right in the show case. Sold in *widths* from 7½" to 22½" and in *lengths* from 32" to 147".

These coils are only made on special order and are not delivered from the Larkin warehouses. Shipped from Atlanta only.

Write for further information and prices. This Tube Coil offers ready sales to live, hustling dealers and distributors.

LARKIN
Refrigerating Corporation
Manufacturers
ATLANTA, GA., U.S.A.

100% VERTICAL SURFACE
U.S. PATENT No. 1,774,358
LARKIN COILS

Engineers Speak on Noise Reduction Before Detroit A.S.R.E.

(Concluded from Page 1, Column 4)

versity's department of engineering research.

Next came J. H. Bracken, industrial manager of the Celotex Co., Chicago, who gave some of the history of sound reduction in electric refrigerators and told how sound-absorbing materials can be used.

Final speaker was J. W. Beckman of the J. A. Nagy Co., who outlined some of the advantages of sound reduction in various fields, and demonstrated the application of the Nagy sound deadener to a sample piece of sheet metal.

Dr. Firestone first gave a theoretical treatment of sound, then considered the various sources of noise in a refrigerator, and then demonstrated some of the characteristics of sound with apparatus which he had brought over from his laboratory in Ann Arbor, Mich.

The most important object of sound-reducing work in electric refrigerators is to eliminate the *unpleasant* noises, he announced at the outset. Some sounds are musical, and can be secondary in a program of elimination. It is quite difficult to measure the unpleasantness of sounds, whereas the intensity and frequency of musical sounds can usually be determined with some accuracy.

He also brought out the fact that noises are complex, that is they are composed of both irregular noises and musical noises, which further complicates their analyses.

Fan and motor noises have a musical component which can usually be studied both as to frequency and intensity, while the non-musical (and hence more objectionable) noises in refrigeration are windage (blowing of air past any stationary object), compressor valve clicks, hissing of gas, churning of oil, rattles set up by belts, gurgling of evaporators, etc.

He proposed as the first step the determination of that part of a refrigerator's noise which is disagreeable, then a plan of attack on the noises which are most troublesome.

The human ear is very helpful in analyzing the sounds, but it should be augmented with a sound meter, he said. The sound meter is a device indicating the intensity of sound in "decibels." Another apparatus is used to determine the frequency of a sound.

The decibel is about the least amount of change in sound intensity which can be detected by the human ear, he said, and set up a 500 cycle note from a loud speaker and changed its intensity a few decibels to show the audience about what the quantity means.

At this point he stated that in designing equipment, engineers should aim at the lower frequencies of sound, since the human ear is less responsive to sounds of low frequencies, hence the sound seems to be less.

Also, small objects do not radiate sound waves as efficiently as larger ones, hence it is to the designer's advantage to let a small object send off the sound waves whenever a sound is to be radiated.

"If you could reduce the sound of your refrigerator by 20 decibels, you would be entitled to a promotion," he declared. The sound level of electric refrigerators averages around 40 to 50 decibels.

Then, with an indicating needle reflected on the projector screen, he showed how intensities of sound and vibrations can be measured.

In any sound-reducing problem it is best to segregate the most important sources and work on them individually, he opined. To demonstrate this he started up three blowers and projected their total sound on the screen; shutting down any one of the blowers completely didn't affect the total sound indication very much, although each blower produced about the same amount of noise.

To find the frequency of a sound, he showed how to adjust the equipment to indicate the sound and then produce a note of known frequency to respond at the same setting of the sound-meter. Knowing the frequency of a sound makes it comparatively easy to locate its cause.

He then demonstrated how sound is "bunched" by the position of nearby objects. For instance, a 500-cycle sound coming from a loud speaker in a distant point in the room (and picked up by microphone and indicated on the screen) would be quite cut off by a person walking across in front of the microphone, and would be increased to the microphone by reflecting additional sound waves to the microphone with a card-board sheet.

This is not true of ordinary noises or the sound of one's voice, due to their more complex nature, although it does increase the difficulty of measuring and controlling the more musical sounds.

Dr. Firestone then enumerated several ways to reduce the sound of electric refrigerators:

1. Decrease the vibrations at their source. This may not always be economically feasible, so a designer may:

2. Isolate the vibrations with an elastic suspension. This must be flexible enough so as not to carry off the vibrations to another object.

Here he again emphasized the desirability of reducing the frequency of noise vibrations. The base of a machine might have a higher frequency, and vibrations imparted to it might produce more objectionable sounds of the higher frequencies, he warned.

3. Avoid resonance of the various parts. It is possible to hook up a motor generator and by varying the speed of the driving motor, so vary the frequency of the alternating current supply, and discover any resonance conditions near the standard operating frequency of 60 cycles, he pointed out.

4. In changing designs, decrease the frequency of vibrating parts. Thus there might be fewer blades in the fan, etc.

5. Extend the enclosure of the machine compartment so as to make it more sound-tight. However, air must be introduced, he admitted, and restricting the air passage may cause more windage, so that this is a matter of balancing the noise factors.

6. It is possible to provide a resonating chamber in the air duct, so designed that noise will tend to enter the chamber instead of radiating and reflecting out into the room.

As the next speaker, Dr. Abbott told about a research project recently conducted by the university in which the roughness of gears and machined parts for the automobile industry were studied for roughness with a much higher degree of accuracy than had previously been attained.

He had a number of charts in which variations and roughnesses had been highly amplified by his laboratory setup. His remarks were of interest to the refrigerating engineers because of their work with the finely finished surfaces of compressor shaft seals.

Mr. Bracken, as the next speaker, first complimented the refrigerating engineering profession on its present state of development in sound reduction, mentioning the fact that designers are quite limited in the expense to which they can go in reducing sound. Everything considered, he considers electric refrigerators remarkably quiet pieces of equipment as compared with other motor-driven appliances.

Noise is a subjective thing, he said. What would be noisy for one household would be entirely satisfactory to another. In this connection he mentioned the elder Joseph Pulitzer who abhorred noise so much that he built his home with isolated rooms, and later in life retired to live on a boat in order to get away from noises which were so disturbing to him.

Continual improvement has been made in the reduction of refrigeration noises, particularly by mounting compressor units on springs and by lining compressor compartments with sound-absorbing materials.

Said Mr. Beckman in his address: "That noise is a serious menace to health and a cause of much inefficiency is pointed out by doctors who state that sudden noises have been found to raise brain pressure to an extent greater than the most powerful drugs used as shocking agents.

"Sound has been defined," he said, "as any pressure variation in the atmosphere capable of stimulating the hearing sense. The frequency range of normal auditory experience is from 20 to 20,000 vibrations or cycles per second. Vibrations below or above these frequencies are not audible to the average human ear.

"Sounds may be classified roughly either as musical or noises, and can be grouped into three categories: strident, neutral, and soothing."

Quoting E. S. Buck, consulting engineer of Cincinnati, Mr. Beckman continued, "'We can absorb much sound by merely lining the duct for a short distance if the duct is not too large. Obviously if the sound has so much volume that we must soften it several times, we shall need a greater length of lining to absorb the angularly generated waves, especially if the duct is of a large cross section.'

"Mr. Buck then states that 'inferentially, the ideal material would consist of a surface similar to a honeycomb with infinitesimal holes of sufficient depth to absorb and trap the sound waves, yet presenting a surface which would cause the least eddy flow depth with its consequent friction and loss of pressure.'

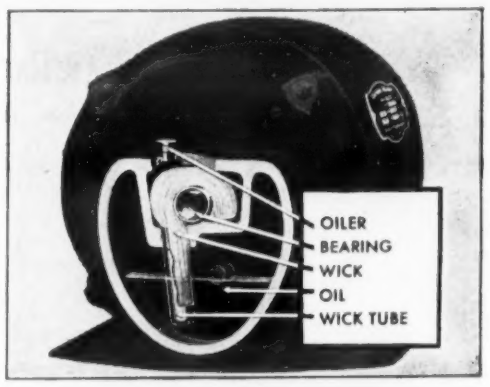
"Refrigeration engineers," concluded the speaker, "have shown themselves capable of overcoming every problem to which they have set themselves. We are justified, therefore, in believing that they will be equally successful in overcoming noise and giving housewives silent refrigerators."

Only Delco Motors have

THESE 3 FEATURES

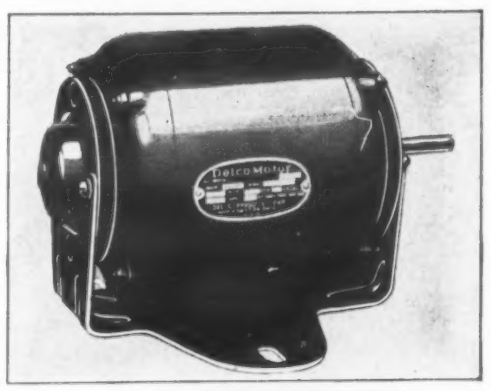
Non-Spillable End-Head

Both over-oiling and leaking on the windings are effectively prevented by this exclusive feature of Delco refrigerator motors. In combination with the patented oil reservoir and the special arrangement of the wick and oil control, this improvement in Delco motors also assures retention of oil during shipment, installation, *and* operation. These advantages constitute Delco's SEALED LUBRICATION —an important factor in assuring satisfaction to your owners long after the warranty period of the refrigerator itself has expired.



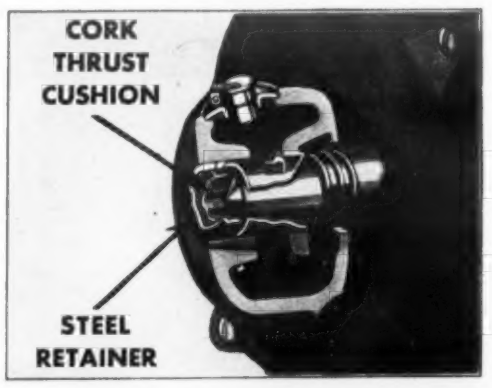
Rubber Cradle Mounting

By literally *floating* the motor in rubber, with no metal-to-metal contact whatever, this second exclusive Delco feature completely insulates the motor mounting against vibration and noise. The rubber is vulcanized to both the motor ring and the mounting. It permits sufficient rotative twist, yet prevents mis-alignment of shaft or pulley. Creeping is impossible, and oil cannot get in to cause deterioration. This rubber cradling is another reason why Delco motors help to keep the users of Delco-powered refrigerators satisfied.



No End-Play Noise . . .

End-play is inescapable in motors which operate belt-driven compressors. Delco motors, however, eliminate the usually attendant noise with a cork insert, pressed into the end-head of the steel shell. This cork cushions the longitudinal movement of the rotor. It is amply lubricated always . . . will not wear out . . . and needs no adjustment or replacement. The elimination of end-play noise is, consequently, a *permanent* advantage of Delco refrigerator motors.



For your customers' satisfaction, and in the interests of your warranty costs, consider all three of these exclusive features when you select compressor motors.

DELCO PRODUCTS CORPORATION, DAYTON, OHIO

PATENTS

ISSUED NOV. 7, 1933

1,933,580. DEFROSTING OF MECHANICAL REFRIGERATORS. Lawrence E. Bauer, Havre de Grace, Md., assignor, by mesne assignments, to Mitzi Ott, New York, N. Y. Application March 10, 1932. Serial No. 598,049. 9 Claims. (Cl. 62—4.)

1. Thermostatic controlling device comprising a thermostat and a switch closed by the movement of said thermostat, and means independent of the operative connection between said thermostat and switch for opposing resistance to the circuit closing movement of said thermostat responsive to the cumulative effect of a definite plurality of completed circuit closing movements of said thermostat.

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EVERY TIME

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That's why hundreds will specify no other.

The analysis attached to every cylinder is a guarantee that the high quality of the contents has been safeguarded.

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MARINETTE - - - WISCONSIN

1,933,614. ICE CUBE TRAY FOR REFRIGERATORS. Earl Babcock, Chicago, Ill., assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application April 16, 1932. Serial No. 605,590. 2 Claims. (Cl. 62—108.5.)

1. In a device adapted to make ice, the combination of a pan having a portion adapted to be placed in contact with a cooling device, a handle on said pan having a horizontal portion, a plunger slidably mounted for vertical movement through said handle, a pressure exerting shoe and power transmitting mechanism connecting said plunger to said shoe so as to actuate the same upon movement of the plunger to dislodge the pan in the event it has become frozen to the cooling device, the arrangement being such that the lifting force exerted on the pan by the plunger may be added to that exerted on the pan by a person grasping the horizontal portion of the handle in a normal manner.

1,933,615. ICE CUBE TRAY FOR REFRIGERATORS. Earl Babcock, Evanston, Ill., assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Original application April 16 1932, Serial No. 605,590. Divided and this application Aug. 28, 1933. Serial No. 687,089. 3 Claims. (Cl. 62—108.5.)

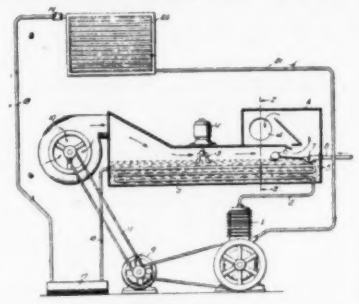
1. In a device adapted to make ice, the combination of a pan having a portion adapted to be placed in contact with a cooling device, and a pressure exerting device carried by said pan and adapted upon movement thereof to cause movement of a portion of said pan to dislodge the same in the event that it has become frozen to the cooling device said pressure exerting device comprising a metal member having a different coefficient of expansion than an adjacent portion of said pan as the result of a change in temperature.

1,933,635. AIR CONDITIONING APPARATUS. Frank L. Meyer, Peoria, Ill. Application July 29, 1932. Serial No. 625,574. 3 Claims. (Cl. 183—62.)

1. In combination, a cabinet of a portable nature having an open top side for the intake of air currents, and a lower open side for discharge of such air currents, said cabinet including two spaced end portions, a roller mounted on the cabinet at each of two opposite sides thereof disposed between the positions of said end portions, a screen mounted on the rollers adapted to wind from one to the other, the edges of the screen adapted to move in abutment with the said end portions, spaced supports extending between said end portions in positions relatively to form an arched path of travel for the screen overlying them, and means beneath the screen within the cabinet for inducing air through the latter and discharging the air through the said lower open side of said cabinet.

1,933,703. DEVICE FOR COOLING CONDENSER WATER. Emile P. Brus and John J. Strang, Kansas City, Mo. Application Jan. 20, 1933. Serial No. 652,671. 3 Claims. (Cl. 62—115.)

1. In combination with a mechanical refrigeration system having a condenser, a tank, liquid in said tank, said refrigerating system condenser disposed in said tank surrounded by said liquid, means for passing an air stream over the surface

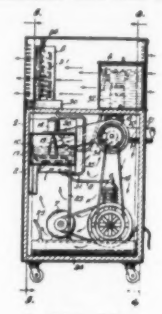


1,933,703

of the liquid to evaporate a portion thereof to cool the same, and means for increasing the surface area of the liquid exposed to the evaporating action of the air.

1,933,771. AIR CONDITIONING DEVICE. John J. Strang and Emile P. Brus, Kansas City, Mo. Application Oct. 8, 1932. Serial No. 636,871. 6 Claims. (Cl. 62—129.)

1. An air conditioning apparatus including in combination a refrigeration system having a condenser coil and a refrigerat-



1,933,771

ing coil, said condenser coil being immersed in liquid, means for circulating the air to be conditioned over said refrigerating coil, means for passing a separate air stream in contact with the liquid surrounding the condenser, and means for offering an increased surface for the evaporation of the liquid.

1,933,897. APPARATUS FOR TRANSFER OF HEAT. Thore Martin Elfving, Stockholm, Sweden. Application Dec. 15, 1932, Serial No. 647,389, and in Sweden Dec. 21, 1931. 12 Claims. (Cl. 62—118.)

1. A refrigerating system having a secondary heat exchanger, comprising a circulating system for transfer of heat containing a volatile medium and comprising a hollow member arranged to receive heat and thereby to cause evaporation of said volatile medium, means for condensing and trapping said evaporated medium in another part of the system, and means for reversing the flow of said volatile medium to return the condensate to the hollow member by gravity.

1,933,918. REFRIGERATING APPARATUS. Robert D. McIntosh, River Forest, Ill., assignor to The Imperial Brass Mfg. Co., Chicago, Ill., a corporation of Illinois. Application Jan. 2, 1932. Serial No. 584,468. 16 Claims. (Cl. 62—8.)

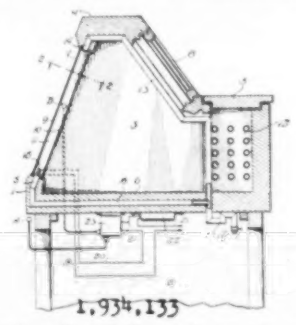
1. In a refrigerating system, the combination with an evaporating chamber therein adapted to be partially filled with liquid refrigerant upon which is superimposed a layer of lubricating oil, of an outlet pipe therein connected to a vapor pipe and having its main inlet for the gaseous refrigerant above the level of the oil and an opening therein through which oil may enter the pipe, an inlet for liquid refrigerant, a float valve for controlling the entry of the liquid refrigerant through said inlet, and means to vary the level of the top of the oil layer.

1,933,991. ELECTRIC REFRIGERATOR ACCESSORY. James P. Meadows, Marshall, Tex. Application March 30, 1932. Serial No. 602,018. 4 Claims. (Cl. 259—113.)

1. Means for agitating cream in a pan located in the coil of a mechanical refrigerator, comprising a reciprocatory agitator adapted for disposition in said pan, cables connected with said agitator and adapted to alternately move the same in opposite directions, a refrigerator wall, and rotary means for pulling one of said cables and simultaneously permitting retrograde movement of the other cable and vice versa; the connection between the agitator and the cables being made up of a reciprocatory rod guided in said wall of the refrigerator and to which the cables are directly connected, and a manually operable coupling detachably connected to said rod and engaged with the agitator.

1,934,133. MEANS FOR PREVENTING FROSTING OR CONDENSATION OF MOISTURE ON GLASS OR OTHER SURFACES. David R. Lauderback, Jacksonville, Fla. Application May 4, 1931. Serial No. 534,976. 16 Claims. (Cl. 62—89.5.)

1. In an apparatus for conditioning the air in a hollow transparent-walled enclosure with respect to the condition of the



1,934,133

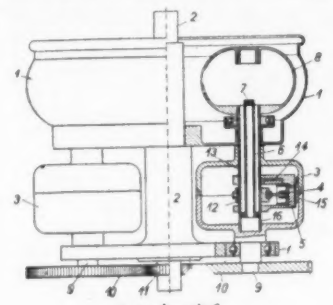
air externally of the enclosure in order to prevent frosting or condensation of moisture obscuring vision through the enclosure, means for circulating air through a course including the enclosure, means for conditioning such air with respect to the external air, and automatic means responsive to variations between the external air and enclosed air for governing said conditioning means.

1,934,145. REFRIGERATION APPARATUS. Ludwig Roebel, Mannheim, Germany. Application Nov. 1, 1930, Serial No. 492,692, and in Germany Aug. 22, 1930. 7 Claims. (Cl. 62—115.)

1. In refrigeration apparatus, a refrigerating unit supported for rotation about a given axis and for revolution bodily about a different axis to which said given axis is inclined, and means for effecting such rotation and revolution of said unit simultaneously.

1,934,146. REFRIGERATION APPARATUS. Ludwig Roebel, Mannheim, Germany. Application Nov. 1, 1930, Serial No. 492,693, and in Germany Dec. 5, 1929. 7 Claims. (Cl. 62—115.)

1. Refrigeration apparatus comprising structure sealed at all points over its outer surface against ingress of fluid to or egress



1,934,146

of fluid from its interior, means for compressing a refrigerant, a portion of said structure containing and providing a compression chamber for said compressing means, another portion of said structure constituting an evaporating chamber, said structure provided with a passage for admitting the compressed refrigerant from the compression chamber to the evaporating chamber, said structure provided with a passage for permitting return of the refrigerant from the evaporating chamber back to said compressing means, means supporting said structure for rotation about a given axis and for revolution bodily about another axis, and charactized by the fact that said compressing means comprises cylinder and piston members held against rotation about said given axis by centrifugal force developed incident to revolution of said structure bodily about said second-named axis.

1,934,147. REFRIGERATION APPARATUS. Ludwig Roebel, Mannheim, Germany. Application Nov. 1, 1930, Serial No. 492,694, and in Germany Dec. 5, 1929. 9 Claims. (Cl. 62—115.)

1. In refrigeration apparatus, structure sealed at all points over its outer surface against ingress of fluid to or egress of fluid from its interior, means for compressing a refrigerant, a portion of said structure containing and providing a compression chamber for said compressing means, another portion of said structure constituting an evaporating chamber, said structure provided with a passage for admitting the compressed refrigerant from the compression chamber to the evaporating chamber, said structure provided with a passage for permitting return of the refrigerant from the evaporating chamber back to said compressing means, means supporting said structure for rotation about a given axis and for revolution bodily about another axis, and eccentric means for effecting compressing action of said compressing means and operable for such purpose incident to such rotation and revolution of said structure.

1,934,155. REFRIGERATING APPARATUS. Harry R. Van Deventer, New York, N. Y., assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. Application June 27, 1930. Serial No. 464,259. 1 Claim. (Cl. 230—139.)

A motor compressor unit comprising a compressor section and a motor section in connectable and disconnectable sealing relation, said compressor section including a compressor, a compressor shaft, a casing adapted to form a hermetic shell around said compressor after final assembly and a frame having a non-sealing bearing for said compressor shaft and supporting said compressor shaft in operative position independently of said motor section whereby said compressor may be tested in said compressor section before final assembly and said motor section including a motor, a motor shaft, a casing adapted to form a hermetic shell around said motor after final assembly and a frame having a non-sealing bearing for said motor shaft and supporting said motor shaft in operative position independently of said compressor section whereby said motor may be tested in said motor section before final assembly

(*Continued on Page 11, Column 4*)

EDWARD WILSON SUES FOR NORGE ROYALTIES

DETROIT—Suit has been instituted in the Wayne County Circuit Court here by Edward Wilson of St. Louis against Norge Corp. asking for payment of royalties on rotary compressors manufactured by Norge Corp. under patents held by Mr. Wilson in the name of National Pump & Compressor Co., St. Louis. Attorney for the plaintiff is Robert M. Brownson, 1120 Free Press building, Detroit.

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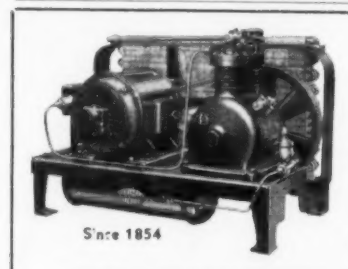

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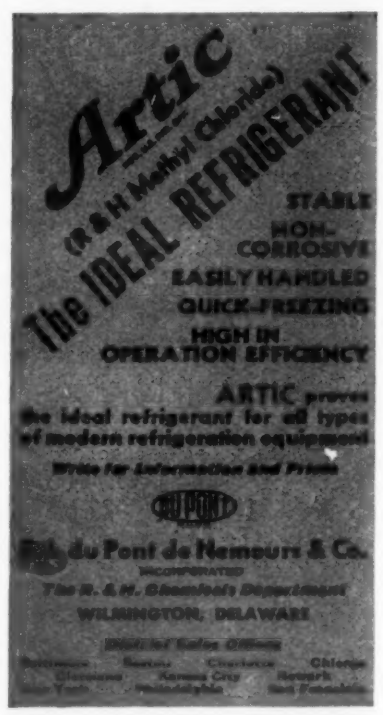

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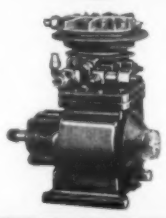

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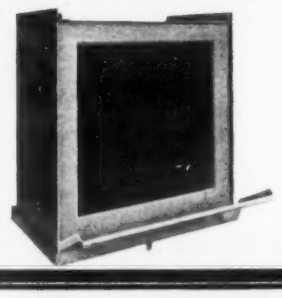

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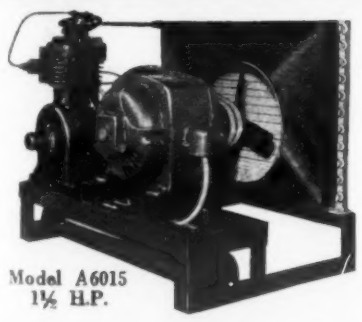

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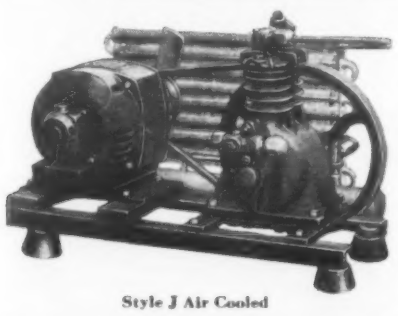

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No. 1432—"Will you kindly furnish me with names of concerns manufacturing water-cooled double copper tube condensers with a capacity of 3,000 B.t.u. per hour."

Answer—Wolverine Tube Co., 1491 Central Ave., Detroit, Mich.

Fin Coil Surface Areas

No. 1433 (Manufacturer, New York)—"We would appreciate it a great deal if you could furnish us with information on surface areas of the different types and makes of fin coils."

Answer—We have never attempted to collect this information. If and when we do, it will be published in the NEWS.

New American Designs

No. 1434 (Manufacturer, New Zealand)—"We have built some of the finest equipment in this country, and are anxious to keep up with the times. We mostly sell American units, our market being too small to allow us to produce at competitive prices. But we do build the cabinets, because the duties and landing charges are so high as to prohibit their purchase from overseas.

"Therefore, we are particularly interested in the latest American developments, and will be pleased to receive any new literature, particularly on cabinets. Since the outlet for refrigeration is too small to allow us to devote all our time to this particular line, we built a number of radio cabinets, and would be pleased to receive illustrations that may be useful.

"Comfort cooling is another subject of considerable interest to us, although no one has made appreciable progress with it because of the price for which it must be sold. American equipment retails with us at about three times the home consumption price.

"Anticipating the market for comfort cooling, we are endeavoring to produce something at a price that will sell. We would appreciate your referring us to some good American book on the subject of comfort cooling."

Answer—It's still too early to tell definitely what next year's refrigerators will look like since only two manufacturers (Leonard and Norge) have announced 1934 models.

This past year witnessed the introduction of a number of "stylish" cabinets (such as Grunow and Norge) which departed from the conventional old ice box effect. This coming season is expected to reveal further styling, also additional emphasis on cabinet features such as Crosley's Shelvador, Leonard's Len-A-Dor, etc.

Radio designs for the current season have just been announced. Cabinets generally have modernistic lines, best typified perhaps by the new Majestics. A new thought in radio cabinets is to design them so as to provide the double service of a radio set and a useful piece of furniture; thus, some are book-cases with shelves for medium-sized books, others are end-tables, some are built in the same cabinet as an electric clock, etc.

The new radio receivers give a greater selection in range of wavelengths, than last year's sets, some bringing in police calls, amateur stations, airplanes, and ships as well as the regular broadcast stations. Automatic tuning is also featured in some models.

For books on comfort cooling and air conditioning, we suggest these two, both brought out in 1933: "Air Conditioning" by Moyer & Fittz (price $4), published by McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N. Y.; and "Air Conditioning for Comfort" by Samuel R. Lewis (price $2), published by Engineering Publications, Inc., 1900 Prairie Ave., Chicago, Ill.

Freon

No. 1435 (Service company, Illinois)—"We are interested in learning where Freon can be purchased, and wonder if you can help us out."

Answer—Kinetic Chemicals, Inc., Tenth & Market Sts., Wilmington, Del.

Lists of Manufacturers

No. 1436—"Can you advise me where to obtain a list of companies making household electric refrigerators, also manufacturers of coils, valves, compressors, and other parts?"

Answer—All manufacturers of complete refrigeration systems, as well as all parts makers are listed in the REFRIGERATION DIRECTORY AND MARKET DATA BOOK.

Refrigeration Accessories

No. 1437 (Service company, Ohio)—"Please advise us of any companies selling refrigeration parts and accessories."

Answer:
Chicago Refrigeration Service Co.
360 E. Grand Ave., Chicago, Ill.
Home Appliance Service Co., Inc.
714 W. Market St., Greensboro, N. C.
Iceless Refrigeration Accessories Co.
2401 Chestnut St., Philadelphia, Pa.
Melchior, Armstrong, Dessau Co.
116 Broad St., New York, N. Y.
Merchant & Evans Co.
21st & Washington Ave., Philadelphia, Pa.
Refrigeration Service, Inc.
3109 Beverly Blvd., Los Angeles, Calif.
Refrigerator Parts Co.
2021 S. Michigan Ave., Chicago, Ill.
Refrigeration Accessory & Supply Co.
642 Beaubien St., Detroit, Mich.

Small Turbine Generators

No. 1438 (Distributor, Michigan)—"As subscribers to your magazine we would like to know the names of manufacturers of small electric light water power turbines for use in small streams for lighting farms, clubhouses, etc."

Wants Refrigeration Lines

No. 1439—"I am interested in making connections with several manufacturers of new specialties selling to users of refrigerators, and seeing your publication listed in *Ayer's Journal Directory*, thought you might know of something suiting my requirements. I would consider new items of any description that have recently appeared on the market, and need introduction to the trade."

Answer—We suggest you subscribe to ELECTRIC REFRIGERATION NEWS, paying particular attention to its editorial announcements and advertisements of new accessories.

PATENTS

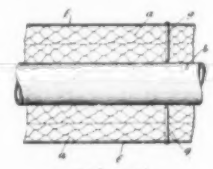
(*Continued from Page 10, Column 5*)

bly, and means for drivingly connecting said shafts when said sections are assembled in sealing relation to produce a hermetically sealed motor compressor unit.

1,934,166. REFRIGERATION. Robert R. Candor, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. Application Dec. 30, 1932. Serial No. 649,588. 13 Claims. (Cl. 62—141.)

1. A refrigerating apparatus for cooling liquids comprising a storage reservoir for liquid to be cooled, a liquid inlet in said reservoir, a refrigerant evaporator containing a body of liquid refrigerant and having a metal wall in contact with said body of liquid refrigerant and with the liquid to be cooled in said reservoir, and a liquid discharge conduit receiving liquid from said reservoir and passing through a zone in thermal contact with said body of liquid refrigerant, said conduit being insulated in said zone from the liquid in said reservoir by said body of liquid refrigerant.

1,934,174. HEAT INSULATION FOR AIR SPACES. Eduard Dyckerhoff, Schloss Blumenau, Wunstorf, Germany, assignor to N. V. Internationale Alfol-Maatschappij, Amsterdam, Netherlands, a corporation of the Netherlands. Continuation of



1,934,174

application Serial No. 105,753, April 30, 1926, and in Germany Nov. 23, 1925. This application March 6, 1933. Serial No. 659,806. 12 Claims. (Cl. 164—28.)

8. The method of insulating structures which comprises the steps of loosely applying a plurality of layers of crumpled very thin metallic foil against a member to be insulated so that the layers mutually support each other to maintain air spaces of great thickness relative to the thickness of the foil, and enclosing such layers of foil in a substantially rigid structure adapted to hold such layers of foil against relative bodily movement.

(*Continued in Next Issue*)

WANTED

Mechanical Engineer experienced and capable in design of automatic controls for electric refrigeration, oil burner and stoker equipment. Must state qualifications in first letter. Excellent opportunity for qualified man, with a high grade established manufacturer.

Box 602
Electric Refrigeration News

CLASSIFIED

PAYMENT in advance is required for advertising in this column.

RATES: Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

POSITIONS AVAILABLE

TERRITORY SALESMEN. Can you sell a profitable oil burner franchise to established home appliance dealers? One of the most prominent and best established oil burner manufacturers wants five men to help expand its present dealer organization. Knowledge of territory and acquaintance with trade east of the Mississippi valley and north of the Ohio valley are desirable assets. For an interview, outline your qualifications, past connections and selling record. Our organization has been acquainted with this advertisement, and replies will be kept confidential. Address Box 604.

EQUIPMENT FOR SALE

FOR SALE. Two dehydrating or drying ovens manufactured by Young Bros. for refrigeration manufacturer. Excellent condition. Complete equipment. Used very little. Overall outside dimensions each oven, 59" wide x 77" high x 41" deep. Very reasonable. Detroit Engineering & Sales Co., 320 Beaubien St., Detroit, Mich.

FOR SALE—Three new, air cooled, ½ h. p. Methyl condensing units with controls, standard make discontinued model, a real bargain. Box 601, Electric Refrigeration News.

MISCELLANEOUS

A LARGE Wholesale Jobber all makes repossessed refrigerators desires to make contact with distributors throughout the United States. Profits large, investment small. Lifetime opportunity to service men, hardware stores, radio stores, furniture stores and refrigerator dealers as a drawing card for increased business. Box 603.

How to save money on Motor, Transmission, Crank, Eccentric and Compressor Shafts: Send us your blue prints, we will send you our prices. Write today.
MODERN MACHINE WORKS
156 N. Milw. St., Milwaukee, Wis.

McCORD REFRIGERATION PRODUCTS

Commercial Evaporators
Domestic Evaporators
Condensers
McCord Ice Trays
Spiral Finned Tubing
Spiral Copper Finned Iron,
Steel or Copper Pipe

McCORD RADIATOR & MFG. CO.
DETROIT - - MICH.

Shelf Studs, Door Knobs, Dials, Name Plates, Pointers and Handles, molded of Bakelite, Durez, Plaskon or Beetle resist rust, moisture, corrosion and most acids.

Manufacturers of ELECTRIC REFRIGERATORS AND AIR CONDITIONERS should have our Catalogue No. 101. Sent free on request.

CHICAGO MOLDED PRODUCTS CORP.
2155 Walnut St. Chicago, Ill.